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Highlights

Births in the United States declined in 1993 for the third consecutive year, to just over 4 million. The 1993 total of 4,000,240 births was 2 percent lower than in 1992 and 4 percent below the most recent high point of 4,158,212 in 1990. The **birth rate** per 1,000 total population declined to 15.5, its lowest point in 15 years. The **fertility rate** per 1,000 women aged 15–44 years was 67.6, 2 percent lower than in 1992 and 5 percent below the 1990 level.

The **birth rate for teenagers** 15–17 years was unchanged in 1993, at 37.8 births per 1,000, while the rate for older teenagers 18–19 years dropped 3 percent in 1993, to 92.1 per 1,000. Although these rates were still higher than 20 years ago, it appears that rates for teenagers may be at a plateau, having changed little or declined during 1991–93, following increases of 19–27 percent from 1986 to 1991. The teenage pregnancy rate has apparently declined in recent years as well, based on declines reported in both abortion and birth rates for teenagers.

Birth rates for women in their twenties, the peak childbearing years, declined in 1993 by 2 percent, to 112.6 per 1,000 women aged 20–24 years and 115.5 per 1,000 women aged 25–29 years. These rates declined 3 to 4 percent during 1990–93.

Birth rates for women in their thirties also appear to have stabilized. Rates increased just 1 percent in 1993, continuing a pattern of very modest increases since 1990. Births to women in their early thirties nevertheless were more numerous than ever, exceeding 900,000, and the number of births to women aged 35–39, 357,000, was higher than in any year since 1960.

Birth rates for women in racial and Hispanic origin subgroups vary substantially. As in previous years, the rates in 1993 were highest for Hispanic women, particularly Mexican women, and for black women. Rates were successively lower for American Indian, Asian or Pacific Islander, and white women. Rates among teen subgroups were highest for Hispanic and black women, and rates for women in their thirties tended to be highest for Asian or Pacific Islander women. Rates by age in most racial and Hispanic subgroups generally declined in 1993.

The rate of **childbearing by unmarried women** has been essentially unchanged for 3 consecutive years, 45.3 births per 1,000 unmarried women aged 15–44 years in 1993. During the period 1980–91, this rate had increased 54 percent. Nonmarital births totaled 1,240,172 in 1993, 1 percent more than in 1992; nonmarital births accounted for 31 percent of all births in 1993. Births to

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CENTERS FOR DISEASE CONTROL AND PREVENTION

unmarried women comprised 24 percent of white births, 69 percent of black births, and 40 percent of Hispanic births. Proportions were generally lower among Asian or Pacific Islander women, averaging 16 percent.

One in five mothers giving birth in 1993 was a college graduate, the same level as in 1992. Another 21 percent had some college, and 36 percent had completed high school. Overall, 77 percent of mothers were high school graduates. Wide variations in **educational attainment** persist among racial and Hispanic origin subgroups, with the proportion completing high school ranging from 40 percent of Mexican mothers to 97 percent of Japanese mothers.

Adequate **maternal weight gain during pregnancy** is a critical factor for optimum birth outcome, especially infant birthweight. The proportion of mothers with weight gains of less than 16 pounds increased for white and black women, to 8.9 percent and 16.3 percent, respectively. Median weight gain for both white and black mothers changed little in 1993. Medians were 30.6 pounds for white mothers and 28.5 pounds for black mothers.

The most frequently reported **medical risk factors** of pregnancy in 1993 continued to be anemia, diabetes, and pregnancy-associated hypertension, with rates of 19 to 30 per 1,000 live births. The incidence of diabetes has risen appreciably from 21 to 26 per 1,000 between 1989 and 1993. Rates for these three conditions among American Indian mothers were substantially higher than for mothers in other racial or ethnic groups.

Cigarette smoking during pregnancy declined again for the fourth consecutive year to 15.8 percent of mothers in 1993. Seventeen percent of white mothers and 13 percent of black mothers reported smoking. Rates were much lower for most Asian or Pacific Islander and Hispanic subgroups (averaging 4–5 percent). The strong adverse impact of maternal smoking on low birthweight levels persisted in 1993. Babies born to mothers who smoked were at nearly twice the risk of weighing less than 2,500 grams (11.8 percent) compared with babies born to nonsmokers (6.5 percent). This translates into an estimated 40,000 infants with low birthweight that was attributable to their mothers' cigarette smoking.

Prenatal care utilization improved for the second consecutive year in 1993, following more than a decade of little change. In 1993, 79 percent of mothers giving birth began care in the first trimester of pregnancy, compared with 78 percent in 1992 and 76 percent over the previous 11 years. Fewer than 5 percent of mothers were reported to have begun care in the third trimester or had no care at all, the lowest level since 1969.

Two **obstetric procedures** used for a majority of births are electronic fetal monitoring (EFM) and ultrasound. EFM was reported for a record number of births, 3.1 million in 1993, or 79 percent of the total. EFM usage has increased steadily since 1989 among women in all age and racial or Hispanic origin groups. Ultrasound usage also continued to increase, to 60 percent of mothers giving birth in 1993.

Data on **method of delivery** show that the rate of cesarean delivery declined again in 1993, to 21.8 percent of all births, 4 percent lower than in 1989, 22.8 percent. Rates increase steadily with advancing maternal age; nearly one-third of mothers in their forties experienced a cesarean delivery. The rate of vaginal birth following a previous cesarean delivery (VBAC) also increased in 1993, to 24.3 percent, a 29-percent increase compared with 1989 (18.9 percent). Forceps deliveries declined again in 1993, to 4.1 percent of births, while the use of vacuum extraction continued to rise, to 5.3 percent of births.

The proportion of **babies born preterm**, that is prior to 37 completed weeks of gestation, increased 3 percent in 1993 to 11 percent, resuming a pattern of steady increase observed during the 1980's until 1991. The proportion of preterm births rose 4 percent for white births to 9.5 percent; the proportion is much higher for black births, 18.5 percent, essentially unchanged from 1992. If the preterm birth rate in 1993 had remained at 9.4 percent (1981 level), about 63,000 fewer babies would have been born preterm in 1993.

The incidence of **low birthweight** increased from 7.1 to 7.2 percent of births in 1993, the highest level reported since 1976. Most of the rise occurred among white births with a rate of 6.0 percent in 1993 compared with 5.8 percent in 1992. Low birthweight is much higher among black infants but was unchanged in 1993, at 13.3 percent. Low birthweight infants comprise about three-quarters of all infant deaths in the first month of life.

More than 100,000 babies were born in **multiple deliveries** in 1993, the highest number ever reported. The multiple birth ratio (the number of live births in multiple deliveries per 1,000 total live births) increased to 25.2. Live births in twin deliveries increased 1 percent (96,445 births), and the number of triplet (3,834 births) and higher-order (334 births) plural births combined rose 7 percent. According to recently published studies, a substantial proportion of all higher-order multiple births are the result of fertility-enhancing techniques.

Sources and methods

Data shown in this report for 1993 are based on 100 percent of the birth certificates in all States and the District of Columbia. Details of the sources of birth data for 1993 and previous years and methods are presented in the Technical notes. Birth data are shown by race of mother and by Hispanic origin of the mother. Race and ethnicity differentials in birth rates and characteristics of births may reflect differences in income, educational levels, and access to health care and health insurance. Text references to white births and white mothers or black births and black mothers are used interchangeably.

Demographic characteristics

Births and birth rates

Just over 4 million babies were born in the United States in 1993. The total of 4,000,240 births was 2 percent lower than in 1992 (4,065,014). U.S. births have dropped steadily since 1990, by 4 percent overall (table 1 and figure 1). Provisional data for 1994 indicate that births have continued to decline, by about 1 percent.

Between 1986 and 1990, births rose by 11 percent, to 4,158,212, the highest level since 1962. During the early 1980's, the number of births had varied little,

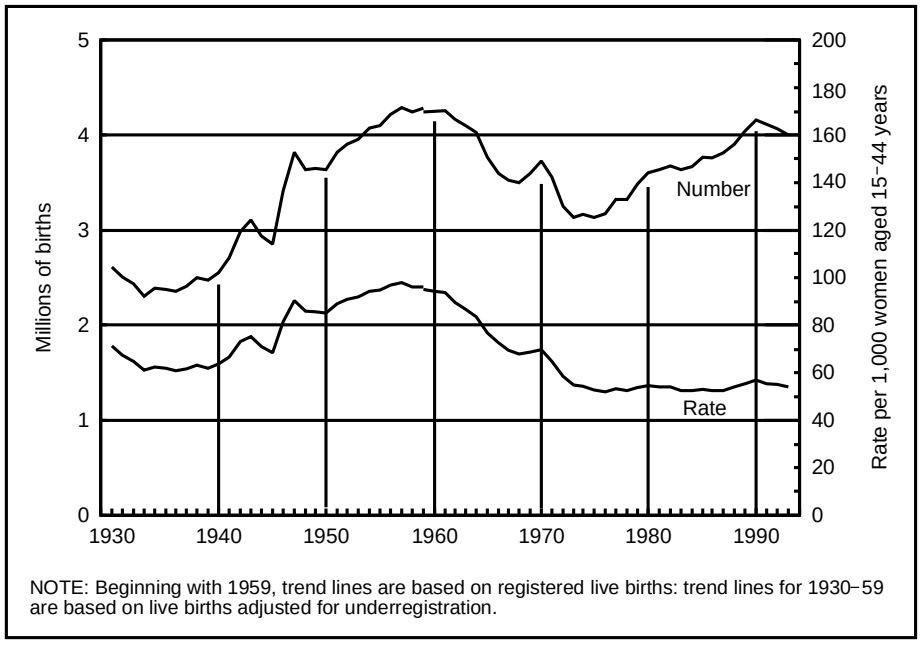


Figure 1. Live births and fertility rates: United States, 1930-93

ranging between 3.6 and 3.7 million per year from 1980 to 1984.

The birth rate in 1993 was 15.5 live births per 1,000 total population, the lowest point in 15 years (15.0 in 1978). The 1993 rate was 3 percent lower than in 1992 (15.9) and 7 percent below the 1990 rate of 16.7. Provisional data for 1994 suggest that the birth rate has continued to fall, by about 1 percent.

The fertility rate was 67.6 live births per 1,000 women aged 15–44 years, 2 percent lower than in 1992 (68.9) and 5 percent below the 1990 rate of 70.9. During the 1980's, the rate first declined 4 percent between 1980 and 1986, and then rose 8 percent between 1986 and 1990. According to provisional data, the fertility rate is expected to decline again in 1994, by about 1 percent.

Age of mother—The birth rate for teenagers 18–19 years declined 3 percent, and rates for women in their twenties dropped 2 percent each. The birth rates for young teenagers 10–14 and 15–17 years and women aged 45–49 years were unchanged. Rates for women in their thirties rose 1 percent each and the rate for women aged 40–44 years increased 3 percent. (See tables 2–5 for births and birth rates by age of mother and live-birth order.)

It appears that birth rates for teenagers have reached a plateau, although rates for both younger and older teenagers in 1991–93 were still higher than in any preceding year in nearly two decades (table 4 and figure 2). Birth rates for teenagers had increased sharply from 1986 to 1991, by 27 percent for teenagers 15–17 years and by 19 percent for women aged 18–19 years. The rate for young teenagers dropped 2 percent between 1991 and 1992 and was unchanged in 1993, at 37.8 births per 1,000. The rate for older teenagers was essentially the same in 1991 and 1992, but then declined 3 percent in 1993, to 92.1 births per 1,000.

Although the rate for young women aged 15–17 years did not change in 1993, the number of births in this age group increased by 2 percent, to 190,535. This increase is entirely the result of a 2-percent rise in the number of women aged 15–17 years between 1992 and 1993, reversing a 12-percent decline from 1986 to 1991 (1–3). Over the next several years, the number of women aged 15–17 years will rise steadily as the increasing number of girls aged 12–14 years gradually enter the 15–17-year age group (1–3). Therefore, unless there are offsetting declines in the birth rate for teenagers 15–17 years over the next few years, the number of births to these young women can be expected to rise further.

The 3-percent decline in the birth rate for older teenagers 18–19 years was the single factor that caused a 2-percent decline in the number of births in this age group, to 310,558. The number of women aged 18–19 years rose very slightly—less than 1 percent. Over the next several years, the number of women in this age group will rise, however, reflecting the current increases in the population aged 12–17 years (1–3). Therefore, the birth rate for 18–19-year-olds will have to continue to fall for there to be further

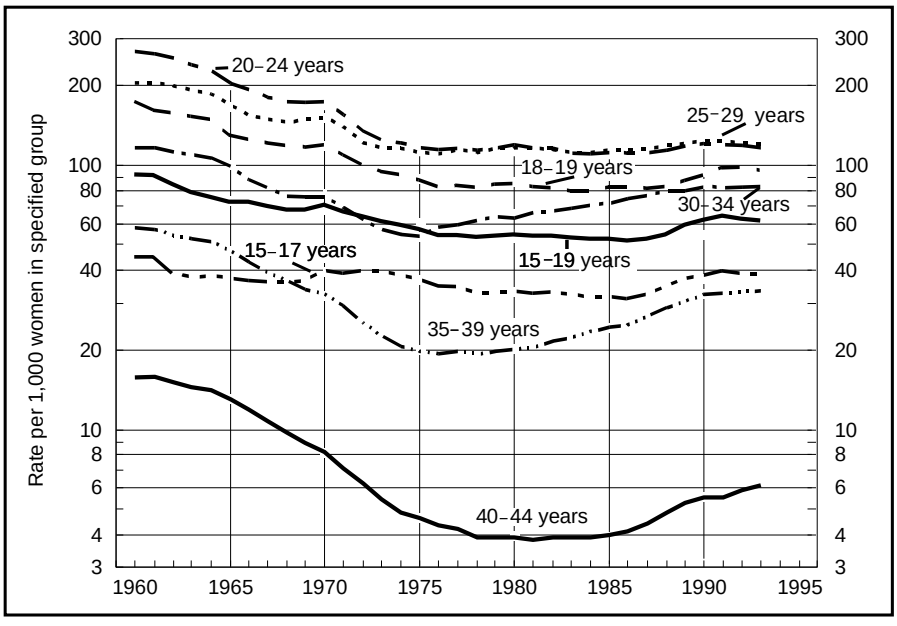


Figure 2. Birth rates by age of mother: United States, 1960–93

reductions in the number of births in this age group.

The principal childbearing ages are 20–24 and 25–29 years; women in these age groups accounted for 54 percent of all births in 1993. Rates for these women each declined 2 percent in 1993, to 112.6 for ages 20–24 years, and to 115.5 for ages 25–29 years. Since 1990, these rates have fallen 3–4 percent.

More than two decades ago, rates for women in their twenties declined dramatically and rapidly, by 27–34 percent between 1970 and 1976 (table 4). Since 1976, the rates have varied relatively little. The rate for women aged 20–24 years has ranged from 107 per 1,000 (1984) to 117 (1990); similarly, the rate for ages 25–29 years has ranged from 109 per 1,000 (1978) to 120 (1990). The small variation in rates for these women since the mid-1970's is the principal factor accounting for the modest fluctuations in the general fertility rate over this time period, ranging from 65.0 in 1976 to 70.9 in 1990 (table 1).

The birth rate for women aged 30–34 years rose 1 percent in 1993, to 80.8 births per 1,000, the same rate as observed in 1990. Between 1980 and 1990, the rate for this age group rose 31 percent, largely reflecting the trend to having children that had been previously postponed (4). The years 1991–93 appear to mark a turning point in the trend; previously reported increases averaging nearly 4 percent annually from 1975 to 1990 have stopped. The 1-percent rise in the birth rate in 1993 was enough, nonetheless, to offset the slight decline in the number of women aged 30–34, resulting in a record number of births to women in this age group (901,151), nearly 2.5 times the number recorded two decades earlier (369,976 in 1973). In the next several years, if the birth rate remains relatively stable, the number of births to women in their early thirties may begin to decline because the number of women in this age group has begun to fall.

Although the birth rate for women aged 30–34 appears to have stabilized over the last few years, the rate for women aged 35–39 has continued to increase, albeit at a slower pace than in the 1980's. There was a 4-percent increase from 1990 to 1993; overall the rate increased 66 percent from 1980 to 1993, a greater rate of increase than for any other age group. The 1-percent rise in the rate in 1993 together with the 2-percent increase in the number of women resulted in a 4-percent increase in the number of births to women aged 35–39 in 1993, to 357,053, the highest number recorded since 1960.

The birth rate for women aged 40–44 years, 6.1 per 1,000, although much lower than rates for women in age groups 15–39, has increased sharply in recent years, by 11 percent from 1991 to 1993, and by 56 percent during 1980–93. Births to women aged 40–44 years rose 6 percent between 1992 and 1993, reflecting the combined effect of the 3-percent increase in the birth rate and the 2-percent increase in the number of women. The 1993 total was 59,071 births, the highest number since 1968.

A number of factors are likely involved in the recent moderation of increases in birth rates for teenagers and women in their thirties. The stabilized rates for teenagers may reflect an apparent leveling off since 1988 in the proportion who are sexually experienced. Although large fractions of teenagers have had sexual intercourse, increases observed during the 1980's appear to have halted. For example, according to the National Survey of Family Growth (NSFG), conducted by the National Center for Health Statistics, the percent of women aged 15–19 who were sexually experienced increased from 46.9 percent in 1980 to 52.9 percent in 1988, and then rose more slowly to 54.9 percent in 1991 (5,6). Although sample sizes are small, it appears that the proportion of sexually experienced among young teenagers 15–17 years is no longer increasing (5). Data from the NSFG also show, however, a slight decline in the proportion of sexually active teenagers currently using contraceptives (7).

Abortion rates among teenagers have declined since the late 1980's, by 10–20 percent from 1988 to 1991, following a period of essentially no change from 1980 to 1987 (6,8). These declines taken together with the declines in the teenage birth rates during 1991–93 and provisional abortion data suggesting a continued decline in the teenage abortion rate in 1992, indicate that the teenage *pregnancy* rate has fallen as well, reversing the pattern of increases observed from 1988 to 1990 (6,9).

In addition to these changes in sexual activity, contraceptive use, and abortion rates, other factors have recently been linked with changes in the birth rates for white teenagers. One is the growing proportion of white teenage births that are to Hispanic women, 32 percent in 1993. (See tables 2, 6, and 7 for basic data.) Hispanic teenagers 15–19 years have substantially higher birth rates than non-Hispanic white teenagers, 106.8 compared with 40.2 in 1993. In 1993, however, the birth rate for Hispanic teenagers dropped slightly, and the rate for non-Hispanic white teenagers fell 4 percent. The overall decline in the birth rate for teenagers in part reflects these changes.

The number of births to teenagers can be expected to remain high, however. In addition to the anticipated increase in the total number of teenagers over the next several years, the proportion of teenagers who are Hispanic has continued to rise. This is because the number of Hispanic women aged 15–19 years has increased considerably in recent years, by 18 percent between 1986 and 1993, and the number of non-Hispanic white teenagers has declined by 14 percent (1,3,10). Thus the birth rates and the number of births for white teenagers in particular will increasingly be affected by the much higher birth rates for Hispanic than for non-Hispanic white teenagers and the growing proportion of the teenage population that is Hispanic.

In 1993 as in 1988–92, 13 percent of all births were to women under 20 years of age. The stability in this proportion results from a combination of factors. Birth rates for teenagers declined but rates also declined for women in their twenties, and rates for women in their thirties rose only 1 percent. In addition, the teenage population has begun to rise after declining for many years, and the number of women in their twenties declined 1–3 percent. However, the number of women aged 35–49 years is still increasing, although more slowly than during the 1980's, 2–4 percent between 1992 and 1993 (2,3). The net

effect of these offsetting changes in birth rates and population size is no change in the proportion of births to teenage mothers.

The sharp increases in birth rates for women in their thirties reported from the mid-1970's to 1990 have moderated considerably since 1990. Several factors may explain this recent pattern. Levels of childlessness among women in their thirties are no longer increasing. For example, the proportion of women aged 35 years at the end of 1993 who were childless was about 20 percent, unchanged from the levels observed in 1990–92, although much higher than 20 years earlier, 10 percent (11). A recent report of birth expectations indicates that the proportion of currently married childless women expecting to have at least one child has declined (12). Moreover, the proportion of women in their thirties who are not currently married has increased and their birth expectations are considerably lower than those of their married counterparts (12,13). The decline in birth expectations among currently married childless women may reflect, in part, the fact that about one-third of these women aged 35–44 years have impaired fertility according to the 1988 NSFG, a factor that will limit the fulfillment of their expectations (14). These patterns of marriage and fertility impairments are likely factors in the recent slowdown in birth rate increases among women in their thirties.

Recent reports of U.S. birth patterns have suggested that total births can be expected to decline over the next several years because of the intersection of declining or stable birth rates and declining numbers of women in the age group 18–34 years (10,15,16). For there to be any increase in the number of births, birth rates for women in the principal childbearing ages will have to rise considerably over the next few years to compensate for the declines in their numbers.

Live-birth order—Birth rates declined again in 1993, by 1–3 percent for first- through fourth-order births, and by 6 percent for fifth births in 1993. Rates for higher-order births were unchanged. Rates for first- through fifth-order births dropped 4–6 percent between 1990 and 1993.

First-birth rates declined slightly (1 percent or less) for women aged 18–29, while rates for women aged 15–17 and 30–39 years rose 2–3 percent, and the rate for women aged 40–44 years increased from 1.1 to 1.2 per 1,000. The 2-percent increase in the rate for teenagers 15–17 years reverses the 3-percent decline from 1991 to 1992. This increase is of concern because it indicates that the proportion of young teenagers becoming mothers for the first time is again on the rise. (The rate had increased 24 percent during 1986–91.)

The first-birth rate for older teenagers 18–19 years increased more moderately between 1986 and 1991, by 14 percent, and changed little between 1991 and 1993. First-birth rates for women in their twenties declined 1–3 percent between 1991 and 1993, reversing the 5–11 percent increases measured between 1986 and 1991. The 2–6 percent increases in first-birth rates for women in their thirties since 1990 are much smaller than those observed in the previous 10–15-year period.

Rates for second-order births fell 6–8 percent for teenagers and by 1–2 percent for women in their twenties. Rates for women aged 30–39 years rose 1–3 percent. Declines in third- and fourth-order birth rates were generally concentrated among women under 30 years of age; rates for women aged 30 years and over changed relatively little.

Race—The number of births to white, black, and American Indian women declined 2 percent each in 1993. Births to Asian or Pacific Islander women rose 2 percent. Birth rates per 1,000 total population all declined, by 2 percent for white and Asian or Pacific Islander persons, 3 percent for the American Indian population, and 4 percent for the black population. Fertility rates also declined. Rates dropped 1 percent for Asian or Pacific Islander women, to 66.7 per 1,000; 2 percent for white women, to 65.4 per 1,000; and 3 percent for black women, to 80.5 per 1,000, and American Indian women, to 73.4 per 1,000. (Numbers and rates are shown in table 1.)

The fertility rate for each racial group declined in the 1990–93 period; rates for 1993 are all below the 1980 levels (table 4). Nonetheless, the numbers of births to American Indian and Asian or Pacific Islander (API) women have risen sharply. Births to American Indian women were 32 percent higher in 1993 than in 1980, and births to API women more than doubled during this time period. The numbers of births to American Indian and API women rose despite the declining fertility rates, because the number of women aged 15–44 in these racial groups rose substantially from 1980 to 1993, by 49 percent and 125 percent, respectively (1,3).

Births to American Indian and API women, as well as births to Hispanic women, tend to be highly concentrated geographically (tables 8 and 9). For example, more than half of the births to American Indian women were to residents of Alaska, Arizona, California, New Mexico, and Oklahoma. Births to API mothers were even more concentrated, with 56 percent occurring to residents of California, Hawaii, and New York.

The 2-percent decline in the fertility rate for white women reflects the 2-percent decline in the rate for married white women; the rate for unmarried white women increased 2 percent. Between 1990 and 1993, rates for married white women dropped 7 percent while rates for unmarried white women increased 9 percent. The 3-percent decline in the general fertility rate for black women between 1992 and 1993 reflects declines of 4 and 3 percent, respectively, in rates for married and unmarried women.

Among women under age 20 years, birth rates were highest for black and American Indian women, followed by white and API women (table 3). The range in rates was greatest for teenagers 15–17 years: The rate for black teenagers, 79.8 per 1,000, was 49 percent higher than the rate for American Indian teenagers, 53.7, and five times the rate for API teenagers, 16.0. This wide disparity by race in birth rates for teenagers is reflected in similar variations in the proportions of births to teenaged mothers in each racial group as shown in table 10.

At ages 20–24 years, rates continued to be highest for black women (152.6 per 1,000), but the rate for American Indian women was nearly as high (139.8). Rates by race were most similar at ages 25–29

years, with a range of 108–120 per 1,000. The relationship of the rates by race shifts in this age group. That is, groups with the highest rates at ages under 25 years have the lowest rates in the age groups 25–39 years. Among women aged 30–34 years, for example, the rate for API women, 103.9 per 1,000, was 27 percent higher than the rate for white women, 82.1, and 54–65 percent higher than the rates for black women (67.3) and American Indian women (62.8).

The making up for previously postponed childbearing is evident in the high rates for white and API women in their thirties and API women aged 40–44 years. Childbearing patterns differ significantly among API subgroups. Birth rates for API subgroups can only be computed in census years when population data are available. Differences in birth rates for Chinese, Japanese, Filipino, Hawaiian, and other API women in 1990 have been reported elsewhere (17). The distribution of births by maternal age and other characteristics for several additional API subgroups (Asian Indian, Korean, Vietnamese, Guamanian, and Samoan) became available beginning with 1992 births; these patterns are described in a recent report (18).

Between 1992 and 1993, birth rates fell slightly for American Indian teenagers, but rose for API teenagers. Rates for women in their twenties declined 1–4 percent in each racial group. Among women aged 30–34 years, rates increased 1 percent for white and API women and declined very slightly for black and American Indian women. Among women aged 35–39 years, rates for white and black women rose 1–2 percent but declined 1 percent for American Indian and API women.

There was no particular pattern in the rates by live-birth order and race. Generally, rates declined or were unchanged for first through fourth-order births, except for a 2-percent rise in the first-birth rate for American Indian women.

Hispanic origin—The fertility of Hispanic women, especially Mexican women, continued to be higher than for any other racial or ethnic group for whom rates can be reliably and routinely computed. In 1993 the fertility rate of Hispanic women was 106.9 births per 1,000 women aged 15–44 years. The rates for Hispanic subgroups ranged from 114.8 for Mexican women (tables 7 and 11) to 55.5 for Cuban women. The general levels and relationships of these rates have been unchanged for many years (15–17,19,20).

Fertility rates for Hispanic women (except Cubans) declined in 1993, by 1–2 percent for Mexican and other Hispanic women and 8 percent for Puerto Rican women. The rate for Mexican women has declined for 2 consecutive years, by 6 percent overall.

Information on births by Hispanic origin is available from all States and the District of Columbia in 1993. As is the case for the American Indian and API populations, Hispanic populations are characterized by considerable geographic concentration (table 9). For example, 76 percent of Mexican births were to residents of just two States, California and Texas. Cuban births were similarly concentrated in Florida (67 percent), and Puerto Rican births, in New York and New Jersey (47 percent). Moreover, at least one-third of the births in Arizona, California, New Mexico, and Texas were to Hispanic mothers (table 9).

Birth rates by age for Hispanic women as a group and for Mexican women are higher than comparable rates for non-Hispanic women with one exception; the highest rate for teenagers 15–17 years is for non-Hispanic black women. Rates for Mexican, Puerto Rican, and ''other'' Hispanic teenagers were similar to those for non-Hispanic black teenagers (a range of 107–111 per 1,000 women aged 15–19 years) (table 7). Among women aged 20–24 years, rates were considerably higher for Mexican, Puerto Rican and ''other'' Hispanic women (175–197 per 1,000) than for non-Hispanic black women (156 per 1,000). Beginning with ages 25–29 years, high rates persist for Mexican and ''other'' Hispanic women, while rates for Puerto Rican women are quite comparable to those for non-Hispanic black women.

Birth rates for Mexican and ''other'' Hispanic women aged 30 years and over are very nearly identical to those for Asian or Pacific Islander women (tables 3,4,7). Rates by live-birth order at these ages however differ substantially. For example, first-birth rates for Mexican and ''other'' Hispanic women aged 30–34 years were 15–26 per 1,000, compared with 37 per 1,000 for Asian or Pacific Islander women. Hispanic women are much less likely than Asian or Pacific Islander women to have their first birth at ages 30 years and over, and substantially more likely to have their fourth- or higher-order birth (tables 3,7,10,11).

Birth rates for Hispanic women in age groups 15–34 and 45–49 years declined very slightly or were unchanged in 1993. Rates for women aged 35–44 years declined 2–3 percent. The general pattern was similar for birth rates for Mexican women, with slightly larger declines in rates for ages 20–24 and 35–44 years. Reductions in rates for non-Hispanic women under age 35 years were somewhat greater than for Hispanic women.

Total fertility rate—The total fertility rate is a measure that indicates how many births 1,000 women would have if they experienced throughout their childbearing years the set of age-specific birth rates observed in a given calendar year. It is a hypothetical measure that shows the implications of current fertility levels for completed family size. The total fertility rate is age-adjusted because it is computed from age-specific birth rates for 5-year age groups; it assumes the same number of women in each age group.

The total fertility rate (TFR) in 1993 was 2,046.0, 1 percent lower than in 1992 and about 2 percent lower than the most recent high point in 1990 (2,081.0) (tables 4,10,11). The continued decline in the TFR during the 1990–93 period reflects declines of 1–4 percent in birth rates for ages 15–29 years. These declines were only partially offset by increases in birth rates for women aged 35–49 years, when birth rates are much lower.

The TFR of 2,046.0 is about 3 percent below the level considered necessary for a given generation to replace itself exactly in the population over the long run (2,100). The TFR has not exceeded 2,100 since 1971 (2,266.5).

The TFR's for white and Asian or Pacific Islander women were similar, 1,982.0 and 1,935.5, respectively. The rate for American Indian women was

2,141.0 and for black women, it was 2,384.5. Rates for white and Asian or Pacific Islander women declined by up to 1 percent, while the rates for black and American Indian women fell 2 percent.

The TFR for Mexican women continued to be substantially higher than for any other racial or ethnic group, 3,174.0 (table 11). The total fertility rates were also high, and above replacement level, for Puerto Rican (2,523.5) and ''other'' Hispanic women (3,038.5). The TFR for Cuban women was much lower, 1,632.5, a reflection of the substantially lower age-specific birth rates reported for Cuban women under age 30 years. The absolute and relative levels of the total fertility rates have been very stable during the 1990–93 period (15–17).

Births by State

The number of births declined in all but five States in 1993 (tables 8 and 9). Numbers declined by up to 3 percent in 39 States and the District of Columbia, and by 4–6 percent in Alaska, Maine, Maryland, Rhode Island, South Carolina, and Vermont. Increases of less than 1 percent were reported for Arizona, Florida, Idaho, Nevada, and Texas.

The birth rate per 1,000 total population declined in every State and the District of Columbia. Declines of up to 3 percent were reported for 40 States and the District of Columbia. Rates fell by 4–8 percent in Alaska, California, Maine, Maryland, Montana, New Hampshire, North Carolina, South Carolina, South Dakota, and Vermont.

The fertility rate per 1,000 women aged 15–44 years declined in the District of Columbia and in all States except Texas. Declines were up to 3 percent in the District of Columbia and in 44 States. Rates fell by 4–5 percent in Alaska, Maine, Maryland, South Carolina, and South Dakota.

Sex ratio

The sex ratio in 1993 was 1,050 male live births per 1,000 female live births (tables 10 and 11), the same as in 1992 and similar to ratios over the last five decades. In total, there were 2,048,861 male births compared with 1,951,379 female births. The sex ratio for white mothers (1,054) was higher than for black mothers (1,028) and American Indian mothers (1,036) but lower than for Asian or Pacific Islander (API) mothers (1,066). All subgroups of API mothers had higher sex ratios than other racial groups and these rates ranged between 1,080 for Chinese mothers to 1,060 for Hawaiian mothers. The sex ratio for Hispanic mothers (1,044) was intermediate between non-Hispanic white mothers (1,057) and non-Hispanic black mothers (1,028). There was wide variation among Hispanic subgroups—Cuban mothers had the highest sex ratio (1,063) while ''other'' and unknown Hispanic mothers had the lowest (1,037).

Month of birth

In all 12 months of 1993, monthly birth rates were below the rates observed in 1992. In 10 of the 12 months of 1993, monthly fertility rates were below the rates observed in 1992. Continuing a pattern observed for many years, the peak months of occurrence of births in 1993 were July, August, and September (table 12). All 12 months had the lowest birth rates in at least 5 years, while October showed the lowest rate since 1976. When the seasonal component is removed from the monthly birth and fertility rates, the underlying trends can be observed. Like the 3 previous years, seasonally adjusted birth and fertility rates for the first half of 1993 were, on average, higher than the rates for the second half of the year.

Day of week of birth

Since 1980 (the first year for which data are available), there has been a steady decline in births on Saturdays and Sundays, with a concomitant increase in births on weekdays. Variation in the daily pattern of births can be measured by an index of occurrence. The index is defined as the ratio of the average number of births for a particular day of the week to the average daily number of births for the year, multiplied by 100. In 1993 the Sunday index was 77.3, an indication that there were 22.7 percent fewer births on Sundays than the daily average, considered to be 100.0; in 1992 the Sunday index was 78.8, or a deficit of 21.2 percent (table 13). The Saturday index of births declined from 84.8 in 1992 to 83.4 in 1993, an increase in the deficit in this 1-year period from 15.2 percent to 16.6 percent. In 1993, as in past years, births occurred most frequently on Tuesdays. The Tuesday index of 111.4 in 1993 signifies that the average number of births on this day of the week was 11 percent higher than the daily average. These patterns are identical for white and black births, but the weekend deficit is far more pronounced for white births.

A weekend deficit is apparent for both vaginal and cesarean deliveries, but is far larger for cesarean deliveries, particularly repeat cesareans (table 13). In 1993 the Sunday index for vaginal births was 83.0, a 17 percent deficit, compared with the Sunday deficit of 32 percent for primary and the 61 percent deficit for repeat cesareans. The Saturday deficit for vaginal births (12 percent) is likewise substantially lower than for primary (22 percent) or repeat cesarean deliveries (55 percent).

The growing concentration of births on weekdays in the early and mid-1980's has been attributed to the increasing rate of cesarean deliveries because many cesareans are scheduled on weekdays (21). However, in the late 1980's, the cesarean rate stabilized (22), and information from birth certificates indicates a decline in cesarean delivery since 1989 (see section on method of delivery). The more recent increase in the weekend deficit can be partly explained by the growing proportion of births that are induced, and the fact that labor is more likely to be induced on weekdays than on weekends. In 1993, 13.4 percent of births were induced, up nearly 50 percent since 1989, when 9.0 percent of births were induced. Increases in induction of labor preceding delivery in this 5-year period are apparent for cesarean as well as for vaginal deliveries. For primary cesareans the increase was from 12.6 percent to 16.0 percent, for repeat cesareans, from 2.4 to 4.8 percent, and for vaginal deliveries, from 9.1 percent to 13.8 percent. While 7 percent of births were induced on Sundays and 11 percent on Saturdays in 1993, 12 percent of births occurring on Mondays, and 15 to 16 percent occurring on Tuesdays–Fridays were induced. A similar pattern of far more inductions on Tuesdays–Fridays than on weekends is

strongly evident for vaginal births, and to a lesser extent for primary cesarean deliveries but not for repeat cesareans.

Births to unmarried women

The rate of childbearing by unmarried women has been essentially unchanged for 3 consecutive years (tables 14 and 15). The 1993 rate was 45.3 live births per 1,000 unmarried women aged 15–44 years, compared with 45.2 in 1991–92. During the prior 11 years (1980–91), the rate rose 54 percent, or about 5 percent annually.

Other measures of childbearing by unmarried women also changed relatively little in 1993. The number of births increased 1 percent, to 1,240,172, compared with 1,224,876 in 1992. The proportion of all births that were to unmarried women increased 3 percent, from 30.1 to 31.0 percent.

Over the past several years, nonmarital childbearing had increased considerably for unmarried white women while it declined for black women, a trend that continued through 1993. The nonmarital birth rate for white women rose 2 percent to 35.9 per 1,000, while the rate for unmarried black women declined 3 percent to 84.0. The birth rate for unmarried Hispanic women was 95.2, essentially unchanged from 1992 (95.3).

Between 1991 and 1993, the rate for white women rose 4 percent, a much slower rate of increase than during 1980–91, when the rate rose 91 percent or about 8 percent annually. In contrast, the rate for unmarried black women declined 6 percent from 1991 to 1993, following an increase of just 10 percent during the 1980–91 period. As a result of these sharply contrasting trends, the nonmarital birth rate for black women in 1993 was 2.3 times that of white women, compared with a differential of 4.5 in 1980.

Birth rates for unmarried women changed less than 2 percent for women in age groups 15–34 years. The rate rose 1 percent for young teenagers 15–17 years, to 30.6 per 1,000, and declined 1 percent for older teenagers 18–19 years, to 66.9. Rates for women in their twenties and thirties rose 1–2 percent. A larger increase was reported for women aged 40–44 years; however, these women account for only 1 percent of nonmarital births. The relative levels of nonmarital birth rates have remained the same for several years, with the rates highest for ages 20–24 (69.2) and 18–19 years (66.9) (table 15 and figure 3).

Between 1992 and 1993, rates for unmarried white women increased 2–3 percent in age groups 15–34 years, while rates for unmarried black women declined 1–4 percent at these ages (table 15). Rates for unmarried Hispanic women increased for teenagers but declined for all women aged 20 years and over (23).

Although the overall nonmarital birth rate for Hispanic women is higher than for black women, this is not the case within each age group. Rates for unmarried Hispanic teenagers are about 27 percent lower than for unmarried black teenagers, while rates for Hispanic and black women aged 20–24 years are about the same. At age 25 years and over, however, the rates for Hispanic women are substantially higher than for black women (table 14). One factor contributing to the higher nonmarital fertility of Hispanic women is the greater incidence of common-law marriages (24). Increases in cohabitation in recent years are probably a factor in the rapid rise in nonmarital childbearing during the 1980's (25,26). It is not possible to measure the frequency of this living arrangement with birth certificate data.

The proportion of all births to unmarried women rose to 31.0 percent, 3 percent higher than in 1992, a slower rate of increase than observed in the 1980's. This measure, sometimes referred to as the ratio of births to unmarried women, is affected by factors other than the nonmarital birth rate and the number of unmarried women. It is also affected by trends in the number of births and birth rate for married women. In 1993 the birth rate for married women declined 2 percent to 86.8 per 1,000, and the number of births to married women also fell 3 percent. These declines in marital fertility are the principal factors in the increase in the proportion of births to unmarried women. In spite of the analytic limitations of the proportion or ratio, however, it is frequently used because it is often the only measure available when the population data needed for birth rates cannot be obtained.

The proportions of nonmarital births vary widely by race and Hispanic origin (tables 10, 11, 14). In 1993, 23.6 percent of births to white mothers, 68.7 percent of births to black mothers, and 40.0 percent of births to Hispanic mothers were to unmarried women, 1–4 percent higher than in 1992. Generally, the proportions

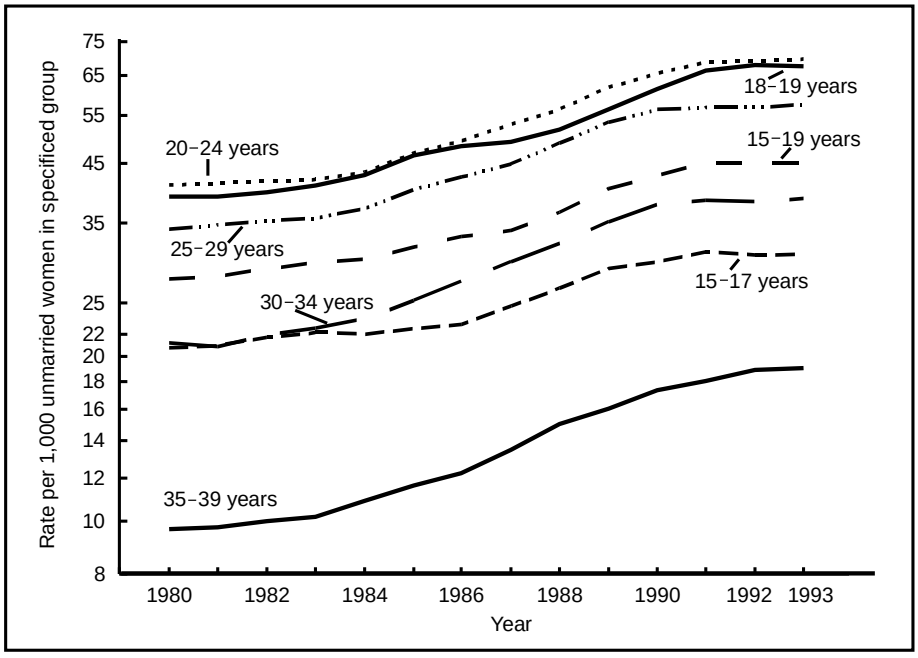


Figure 3. Birth rates for unmarried mothers by age of mother: United States, 1980–93

were lowest for Asian or Pacific Islander women, 16 percent overall, but the range by Asian or Pacific Islander subgroup was considerable (7–48 percent). Proportions were generally higher for Hispanic subgroups, ranging from 21 to 59 percent. To some extent, these variations in nonmarital birth proportions reflect similar variations in the proportions of births to teenaged mothers (tables 10 and 11). In most cases, the groups with high proportions of births to teenaged mothers also have high proportions of nonmarital births.

The small increase in the number of nonmarital births in 1993 as in 1992 reflects almost entirely the 1-percent increase in the number of unmarried women in each year, because the nonmarital birth rate has been essentially unchanged during this period. Over the next few years, the number of unmarried women in the childbearing ages will probably begin to grow again as today's teenagers reach the prime childbearing ages—assuming their marriage patterns by age do not change from those observed in recent years. Thus, unless the birth rate for unmarried women declines, the number of nonmarital births may continue to increase.

Levels of nonmarital childbearing vary considerably by State. Numbers and proportions of births to unmarried women by race and State are shown in table 16. The numbers of births increased up to 5 percent in 39 States and declined by 6 percent in 11 States and the District of Columbia. The proportion of births to unmarried women increased in all but two States, at least partly a reflection of the declines in total births by State described earlier in this report (Births by State).

Age of father

The birth rate per 1,000 men aged 15–54 years declined again in 1993, by 3 percent, to 54.4 (table 17). This rate fell by 7 percent between 1990 and 1993, following a comparable increase during 1986–90.

Rates declined by 2 percent or less for men in age groups 20–44 years. The rate for men aged 15–19 years rose 1 percent and rates for men aged 45 years and over were unchanged. The 1-percent rise in the rate for teenaged men, although small, marks a resumption of a pattern of increased rates observed since 1986. Between 1986 and 1991, the rate had increased 39 percent. Increases for men aged 20–54 years were observed from 1986 through 1990 only, and were considerably smaller than for teenagers.

Birth rates declined by 2 percent for white men, to 50.9 per 1,000, and by 3 percent for black men, to 78.3. Patterns by age for white men were similar to those for all races combined, except the rate for white men aged 15–19 years rose more, by 2 percent. Birth rates by age for black men all declined, except for a 3-percent increase in the rate for men aged 50–54 years. During 1990–93, rates for white men aged 20–49 years declined 1–5 percent, while rates for black men in these age groups fell 3–11 percent.

Educational attainment

According to data from the birth certificate, the percent of mothers who had 12 or more years of schooling in 1993 (77 percent) was similar to that of 1992 and also very close to that of all women 15–49 years of age (table 18) (15,27). About 36 percent of mothers in 1993 were high school graduates, 21 percent had attended some college, and 20 percent were college graduates. The percent of mothers with 12 or more years of schooling was highest for women in their thirties (almost 90 percent). The median educational attainment for all mothers in 1993 was 12.7 years.

The pursuit of additional education by women is one of the factors that has been associated with postponement of childbearing. A previous report has shown that fertility rates for women in their early twenties are lowest for those who are most educated (16 or more years of schooling). However, for women aged 25–44 years, college graduates have higher fertility rates than women with less education (28). The educational attainment for women in their thirties and forties was higher for those who gave birth in 1993 than for all women in general (27). A higher percent of white than black mothers had 12 or more years of schooling in 1993—78 percent versus 70 percent. The higher educational attainment for white than black mothers was also reflected in the median years of school completed—12.8 years for white mothers versus 12.5 years for black mothers. Differences in educational attainment between white and black mothers were greater for those 30 years of age and over than for younger mothers. For example, equal proportions of white and black mothers aged 20–24 years had some college, 26 percent. However, for mothers 40 years of age and over, the proportion with some college was much higher for white (64 percent) than for black mothers (46 percent).

The percent of mothers with 12 or more years of schooling was lowest for American Indian mothers (65.2 percent) and highest for Japanese mothers (97.4 percent) (table 10). With the exception of ''Other'' Asian or Pacific Islander (API) mothers, a higher percent of mothers in all API subgroups had 12 or more years of schooling than white mothers. Less than half (47 percent) of Hispanic mothers had 12 or more years of schooling compared with 86 percent of non-Hispanic white mothers and 70 percent of non-Hispanic black mothers (table 11). When educational attainment was examined for Hispanic subgroups, the percent of Cuban mothers with 12 or more years of schooling (85 percent) was comparable to that of non-Hispanic white mothers. Only 40 percent of Mexican mothers had 12 or more years of schooling, the lowest of any Hispanic subgroup. The patterns in educational attainment for mothers in 1993 by Hispanic origin and for Hispanic subgroups are consistent with that of the Hispanic population in general (29).

Maternal lifestyle and health characteristics

Maternal weight gain

It is widely recognized that maternal nutrition is an important determinant of pregnancy outcome. Inadequate weight gain during pregnancy is associated with a greatly increased incidence of low birthweight, preterm delivery (before 37 completed weeks of gestation), and fetal growth retardation (30–34). Since 1989 information on maternal weight gain has been available from certificates of live birth. In 1993 the District of Columbia

and all States except California included this item on their birth certificate, representing 85 percent of the births in the United States. Data on weight gain by race and ethnicity of mother are presented in tables 19–24.

In 1990 the Institute of Medicine of the National Academy of Sciences recommended that maternal weight gain be geared to a mother's prepregnancy weight for height, as measured by her body mass index (BMI) (31). The Institute of Medicine's recommendations are that women who are underweight (low BMI) gain 28–40 pounds, those who are of normal weight (average BMI), 25–35 pounds, those who are overweight (high BMI), 15–25 pounds, and obese women, not more than 15 pounds. The advice for teenagers and black women is to gain at the upper limit of these ranges. The American College of Obstetricians and Gynecologists has published these recommendations (30).

Birth certificate data on maternal weight gain are based on a single question, asking for ''weight gained during pregnancy'' in pounds. Related data on mother's prepregnancy weight and her height are not available. Therefore, in this report, the focus is on weight gains of less than 16 pounds, considered inadequate in virtually all cases regardless of the mother's prepregnancy weight or her height, and weight gains of 25 pounds or more, generally appropriate for most women.

Maternal weight gain is shown in 5-pound intervals in the tables, from less than 16 pounds to 46 pounds or more. As indicated in table 19, 35.5 percent of white mothers and 28.5 percent of black mothers gained 26–35 pounds, one-half of a percentage point less for both races than in 1992 (36.1 percent and 28.9 percent, respectively). Weight gains of less than 16 pounds, increased for white mothers from 8.3 percent in 1992 to 8.9 percent in 1993, and for black mothers, from 15.8 percent to 16.3 percent (tables 19 and 23). The median weight gain of white mothers was 30.6 pounds in 1993. Between 1989 and 1992 the median had ranged from 30.5 to 30.7 pounds. For black mothers, median weight gain increased between 1989 and 1992 (from 27.8 to 28.6 pounds) but declined slightly to 28.5 pounds in 1993. The lower weight gain of black than white mothers is consistent with a recent study which found that black mothers were significantly more likely than white mothers to be given medical advice on weight gain which did not meet the minimum standards in effect at that time. The disparity in advice could not be explained by differences in body mass index, age, education, parity, marital status, or site of care (35).

As noted earlier, weight gain is highly associated with pregnancy outcome. A recent study based on live birth certificates, found that an inadequate weight gain is at least as great a risk for low birthweight as smoking during pregnancy (36). As shown in table 20, low birthweight (less than 2,500 grams) declines substantially with added weight gain regardless of gestational age. For white mothers, the decline in low birthweight is from 12.3 percent for gains of less than 16 pounds to 3.9 percent for gains of 41–45 pounds, a reduction of two thirds. Weight gain of over 45 pounds is associated with a slight rise in low birthweight, to 4.2 percent. For black births, the decline in low birthweight with added weight gain is even more significant—dropping by 71 percent (from 23.2 to 6.7 percent) for gains of less than 16 pounds compared with gains of 41–45 pounds and then rising slightly to 6.9 percent for higher gains. However, for comparable weight gain, the risk of low birthweight is at least two-thirds higher for black than for white births.

In 1993 Hispanic-origin mothers as a group were far more likely to gain less than 16 pounds than non-Hispanic white mothers (12.3 percent compared with 8.4 percent), but were less likely to gain minimally than non-Hispanic black mothers (16.4 percent) (tables 21 and 24). The median weight gain of Hispanic mothers was 1 pound lower than the median gain of non-Hispanic white mothers (29.7 versus 30.7 pounds), but 1.2 pounds higher than that of non-Hispanic black mothers (28.5 pounds) (table 21).

Mexican mothers were the most likely of the Hispanic-origin groups to gain less than 16 pounds (13.3 percent), while only 7.0 percent of Cuban mothers and 10.4 to 12.0 percent of other Hispanic-origin groups had this minimal weight gain (table 21). The median weight gain of Mexican mothers, the lowest of all Hispanic groups, was 2.2 pounds less than that of Cuban mothers who had the highest median gain (28.6 compared with 30.8 pounds). The lower weight gain of Mexican than Cuban mothers may be associated with the higher proportion of Mexicans who are overweight (37), because heavier women tend to gain less during pregnancy (32,35).

As for white and black mothers, increases in weight gain for Hispanic mothers are strongly associated with declines in low birthweight even when gestational age is taken into account (table 22). For all Hispanic groups combined, there was about a two-thirds decline in low birthweight with added weight gain, from 12.1 percent for gains of less than 16 pounds to 3.9–4.4 percent for gains of 41 pounds or more. The steepest decline in low birthweight is evident for births to Puerto Rican mothers, dropping by about 75 percent for the highest compared with the lowest weight gains.

Medical risk factors

Medical risk factors can complicate pregnancy and result in poor pregnancy outcome. For example, potentially treatable hypertensive disorders (preeclampsia, pregnancy-associated hypertension, and chronic hypertension) have been tied to very low birthweight, low birthweight, preterm birth, and ultimately, neonatal death (38–40). Diabetes during pregnancy has been linked with cesarean delivery, abnormal conditions of the newborn such as hyaline membrane disease/respiratory distress syndrome, and congenital malformations (41–43).

Sixteen specific medical risk factors are reported on the birth certificate. It has been shown that levels of these factors may be underreported (44).

For 1993, as for earlier years, anemia, diabetes, and pregnancy-associated hypertension were the most frequently reported medical risk factors, with rates ranging from 18.7 to 29.7 per 1,000 live births (table 25). Since 1989 when data for these factors were first available, reported anemia and hypertension levels have not varied markedly; the

diabetes rate, however, has demonstrated a steady pattern of increase, rising from 21.1 for 1989 to 26.0 per 1,000 for 1993. Increases in the maternal diabetes rate were noted across all age groups, among mothers of both singleton and plural births, and for both white and black mothers.

The incidence of two less-prevalent but sometimes severe medical conditions during pregnancy, acute or chronic lung disease and hydramnios/oligohydramnios, also rose appreciably. Acute or chronic lung disease increased from 3.0 to 4.8 per 1,000 and hydramnios/oligohydramnios from 5.7 to 9.2 per 1,000 between 1989–93. Rates for both risk factors increased for all age groups and among white and black mothers.

The only medical risk factor to demonstrate substantial, consistent decline between 1989 and 1993 was eclampsia, which dropped from 4.4 to 3.3 per 1,000. Declines of 23 and 27 percent were observed for white and black mothers.

The prevalence of most medical risk factors varies widely by maternal age. Levels of anemia, hemoglobinopathy, and renal disease generally decline after the teenage years, while risk factors such as pregnancy-associated hypertension, acute or chronic lung disease, and eclampsia tend to follow a U-shaped pattern—that is, rates are highest for both younger and older mothers. Conversely, conditions such as diabetes, cardiac disease, and chronic hypertension increase with advancing maternal age.

As in earlier years, anemia was the most frequently reported medical risk factor among black mothers (32.6 per 1,000), followed by pregnancy-associated hypertension (29.4 per 1,000) and diabetes (22.8 per 1,000). Although overall rates among black women for the latter two risk factors are slightly lower than those for white mothers, levels tend to worsen disproportionately for black mothers with increasing maternal age. As a result, pregnancy-associated hypertension and diabetes rates for mothers 30 years of age and over were 14–26 percent higher for black than for white mothers. Black and white differences in other risk factors also are more pronounced at older ages; for example, black mothers overall were nearly twice as likely to have chronic hypertension than white mothers but black mothers 30 years of age and over were nearly three times as likely to have this condition. The higher rates for several medical risk factors, and in particular hypertension, which has been identified as a risk factor for low birthweight (38), may help to explain the disproportionately high percent low birthweight for older black mothers.

Among American Indian mothers the anemia rate of 63.3 per 1,000 was four times as high as that among white mothers and nearly twice as high as the rate for black mothers (table 26). Rates of diabetes, pregnancy-associated hypertension, and uterine bleeding were also elevated for American Indian mothers compared with mothers of other racial or ethnic groups, a pattern consistent with earlier years (45). Age-specific rates for these four medical risk factors were higher among American Indian mothers than for other racial or ethnic groups at nearly each age group and, thus, the higher overall levels for American Indian mothers cannot be attributed to differences in the maternal age distribution (data not shown).

Anemia was comparatively rare among Chinese (8.7 per 1,000) and Japanese mothers (9.9 per 1,000), as was pregnancy-associated hypertension (9.5 and 13.1, respectively). Diabetes, however, was more frequent among each Asian or Pacific Islander subgroup than among white or black mothers.

Overall, anemia, diabetes, hypertension, and uterine bleeding levels for Hispanic women compared favorably with most racial or ethnic groups, but considerable variation was observed among the Hispanic subgroups (table 27). For example, anemia rates ranged from 12.5 per 1,000 for Central and South American mothers to 29.5 for ''other'' and unknown Hispanics. Among Hispanics, the highest diabetes rates were reported for Puerto Rican mothers, while anemia, pregnancy-associated hypertension, and uterine bleeding rates were most elevated among ''other'' and unknown Hispanics. Risk factor levels also varied by place of birth; Hispanic mothers born in the 50 States and the District of Columbia reported higher rates of anemia, pregnancy-associated hypertension, and uterine bleeding compared with mothers born elsewhere (data not shown).

Tobacco use during pregnancy

Smoking during pregnancy was reported by 15.8 percent of mothers giving birth in 1993. This was the fourth consecutive year of decline since information on tobacco use first became available on the birth certificate in 1989. The rate reported in 1989 was 19.5 percent. Data for the 46 States and the District of Columbia, which reported tobacco use in 1993, are shown in tables 23, 24, and 28–31. This reporting area, which excludes California, Indiana, New York, and South Dakota, accounted for 76 percent of U.S. births in 1993.

The downward trend in tobacco use by pregnant women is generally consistent with recent trends in smoking reported among women of childbearing age. Levels among all women in the childbearing ages, which are somewhat higher than among pregnant women, changed little, however, during 1990–92 after declining during 1987–90 (46).

Cigarette smoking during pregnancy has long been associated with adverse outcomes, including low birthweight, preterm birth, and intrauterine growth retardation and with infant morbidity and mortality (including sudden infant death syndrome) (47–50). Cigarette smoking also has been shown to have negative consequences for child health and development (51). One recent study found that smoking, even if discontinued in the earliest stages of pregnancy, can compromise birth outcome (50).

The processes through which tobacco adversely affects pregnancy have been described elsewhere (48,52). Among the most critical is the passage of such substances as nicotine, hydrogen cyanide, and carbon monoxide across the placenta into the fetal blood supply, thereby restricting the growing infant's access to oxygen.

Smoking during pregnancy declined among both white and black women in 1993, to 16.8 percent of white mothers and 12.7 percent of black mothers. From

1989 to 1993, smoking rates declined 18 percent for white mothers (from 20.4 percent in 1989) and 26 percent for black mothers (from 17.1 percent in 1989).

Smoking rates are generally very low among Asian or Pacific Islander women and Hispanic women (tables 23, 24, and 29). In 1993 rates among Asian or Pacific Islander women ranged from 1 percent (Chinese mothers) to 7 percent (Japanese mothers). Tobacco use by American Indian and Hawaiian mothers was considerably higher, 22 percent and 17 percent, respectively. Smoking during pregnancy was reported by 5 percent of Hispanic women overall, with rates ranging from 2–5 percent for Mexican, Cuban, and Central and South American mothers, to 11 percent for Puerto Rican mothers (table 29). Between 1992 and 1993, rates declined for each racial and Hispanic-origin group except Japanese women for whom there was a small increase.

Data on tobacco use by Asian or Pacific Islander (API) and Hispanic women are limited somewhat because this information is not reported by California and New York, two States that together accounted for nearly half of U.S. births to API and Hispanic women. Other studies, however, have shown low smoking rates among API and Hispanic mothers, including mothers in California (53,54).

Smoking during pregnancy is particularly rare among Hispanic women (55) and API women who were born outside the United States. In 1993 for example, 6 percent of Mexican mothers born in the United States were reported to have smoked during pregnancy compared with only 2 percent of Mexican mothers born elsewhere. Similarly, 12 percent of API mothers born in the United States were smokers compared with only 3 percent of API mothers born elsewhere (tabular data not shown).

Smoking rates vary considerably by maternal age. Generally, rates were highest for women in the age group 18–24 years, with rates somewhat lower for younger teenagers and women aged 25 years and over. However, there are distinctive differences in the rates for white and black women by age. For white women, the highest rates, 21–25 percent, were for ages 15–24 years, compared with 10–15 percent for teenagers under 15 years and women 25 years and over. In contrast, rates for black women increased steadily with advancing maternal age, from 2–6 percent of teenagers to 20 percent of women in their thirties, and then declined to 17 percent of women in their forties (table 28). There has been no change in these relationships since 1989.

Among API women who are much less likely to smoke overall, there are nonetheless considerable differences by maternal age, with rates in 1993 declining from 9–10 percent of teenagers to 3–4 percent of women aged 30 years and over (tabular data not shown). This pattern of generally declining rates by age was observed for Asian or Pacific Islander subgroups (except Hawaiians) as well, although the levels of smoking differ considerably among the subgroups.

Smoking rates among Hispanic women vary little by maternal age, with a range of 4–5 percent overall (table 29). Low rates and a narrow range were observed also for each Hispanic subgroup, except Puerto Rican women, among whom smoking rates were higher and varied more, from 8 to 13 percent.

During the period 1989–93, smoking rates declined in all age-of-mother groups, with the largest declines for women aged 15–29 years (15,56–58). Smoking rates generally fell more for black than for white women; declines were 28–40 percent in rates for black women aged 15–29 years and 14–22 percent for white women.

Not only has tobacco use declined among pregnant women in recent years, but there has also been a gradual reduction in cigarette consumption among women who do smoke. The proportion smoking 10 cigarettes (half a pack) or less increased from 58 percent in 1989 to 63 percent in 1993 (15,56–58). Similar increases were noted for white and black women, but black women were consistently more likely than white women to smoke half a pack or less daily, 78 percent compared with 60 percent in 1993.

Maternal smoking rates vary in a distinctive pattern according to educational attainment. Women who have attended but not completed high school (9–11 years of schooling) have had the highest rate, 29 percent in 1993, followed by high school graduates, 19 percent, and women with a grade school education, 15 percent. Eleven percent of mothers with some college reported smoking while just 3 percent of college graduates were smokers (table 30). Even among mothers aged 20 years and over, smoking rates were highest among mothers who attended but did not graduate from high school. These relationships were similar for white and black mothers, but in every educational attainment category, except college graduates, smoking rates were higher for white than for black mothers. The gap was widest for mothers with 9–11 years of schooling: 34 percent of white mothers and 18 percent of black mothers were smokers.

During the period 1989–93, smoking rates fell for women in all educational attainment categories, but the declines were substantially greater for college graduates (down 38 percent) and women with a grade school education (down 27 percent) than for other women (declines of 13–17 percent). In addition, smoking rates fell more for black than for white women in each educational attainment group except for women with a grade school education (15,56–58).

Women with the lowest smoking rates were also the lightest smokers. For example, of college graduates who smoked, 72 percent smoked 10 cigarettes or fewer daily, compared with 62 percent of smokers with 9–11 years of schooling. Regardless of maternal education or race, the proportion smoking 10 cigarettes or fewer increased during the 1989–93 period (15,56–58).

Smoking during pregnancy has been linked in many studies to an elevated risk of low infant birthweight (46,47,59–61). In 1993, 11.8 percent of babies born to smokers were of low birthweight (less than 2,500 grams), compared with 6.5 percent of births to nonsmokers (table 31). These levels of low birthweight and the disparity by maternal smoking status have been observed since 1989 (15,56–58). Studies have also shown that the impact of maternal smoking on low birthweight levels increases with advancing age of mother (59,61). Birth certificate data confirm these findings. In 1993, for example, among births to teenage mothers 18–19 years, the low birthweight level for

smokers (10.5 percent) was 22 percent higher than for births to nonsmokers (8.6 percent). In contrast, among births to mothers aged 30–34 years, low birthweight for births to smokers (13.6 percent) was more than twice the level for births to nonsmokers (5.7 percent).

Maternal smoking adversely affects birthweight for white and black infants. The levels of low birthweight for white births were 10.0 percent for births to smokers and 5.2 percent for births to nonsmokers. Among black births, the levels were 22.6 percent for births to smokers and 12.0 percent for births to nonsmokers. Advancing maternal age is an additional risk factor for both white and black births.

The number of cigarettes smoked per day also affects the percent low birthweight. For example, the proportion low birthweight among births to women smoking more than a pack of cigarettes per day was 14.1 percent, compared with 11.0 percent among births to mothers smoking 1–5 cigarettes daily (tabular data not shown). A similar pattern was observed for white and black births. Among white infants the percent rose from 8.3 percent (1–5 cigarettes) to 12.8 percent (21 cigarettes or more); the comparable low birthweight proportions for black infants were 20.1 percent and 30.3 percent.

It is apparent that even light smoking is problematic for infant birthweight. That is, among mothers who smoked the least, the incidence of low birthweight was considerably greater than the incidence among births to nonsmokers. For example, the percent low birthweight for babies born to women smoking 1–5 cigarettes per day (11.0 percent) was 42 percent higher than the low birthweight proportion for nonsmokers (6.6 percent). The proportions for white births were 8.3 percent (1–5 cigarettes) and 5.2 percent (nonsmokers), and for black births, the low birthweight levels were 20.1 percent (1–5 cigarettes) and 12.0 percent (nonsmokers).

The proportion of low birthweight births resulting from maternal smoking can be estimated by computing the percent of attributable risk (60,62). This measure provides an indication of what low birthweight levels would be if no mothers smoked during pregnancy. About 14 percent of the incidence of low birthweight in 1993 was due to maternal smoking; the percent low birthweight would have been about 6.2 percent rather than 7.2 percent. In other words, about 40,000 fewer babies would have been born with low birthweight in 1993 if their mothers did not smoke during pregnancy.

Alcohol use during pregnancy

Alcohol use by pregnant women has also been shown to jeopardize birth outcome. Studies have shown a variety of adverse effects from alcohol use; the most severe of these, resulting from excessive drinking, is fetal alcohol syndrome (FAS). FAS is characterized by growth retardation, facial malformations, and disorders of the central nervous system of which the most severe is mental retardation (63–65). Maternal alcohol use, even low to moderate use, has also been found to negatively impact birth outcome, independent of such factors as tobacco use and other maternal and infant characteristics (64,66,67).

Reported alcohol use declined substantially in 1993. Only 2.1 percent of mothers reported any alcohol use, compared with 2.6 percent in 1992, 2.9 percent in 1991, and 4.1 percent in 1989, the first year this information was reported on the birth certificate. Data on alcohol use were provided by 47 States and the District of Columbia in 1993, accounting for 78 percent of U.S. births; California, New York, and South Dakota did not report this information.

Whereas overall reported alcohol use declined considerably in 1993, at the same time there was a distinct tendency towards a greater consumption of alcohol among those who did drink. In 1993, 55 percent of women who used alcohol reported consuming 1 drink or less per week, compared with 61 percent in 1992. Concomitantly, the proportions of women reporting 2, 3–4, and 5 drinks or more all increased in 1993. This trend was observed for white and black women.

Alcohol use during pregnancy is clearly substantially underreported on the birth certificate. Many other studies, based on data from personal interviews and questionnaires, have reported much higher rates of maternal alcohol use ranging from 20 to 45 percent during the 1980's (68,69). A recently published study found sharply higher rates of alcohol use among all women in the childbearing ages (about 50 percent), and among pregnant women (about 15 percent) (70). It is likely that the birth certificate questions on alcohol use may have contributed inadvertently to the underreporting. These questions focus on the number of drinks per week, whereas other studies inquire about drinks per month. Women who drink relatively little, say 1–2 drinks per month, may believe that their level of alcohol consumption is too low to report on the birth certificate. An additional factor no doubt affecting the reporting of alcohol use during pregnancy is the stigma associated with it (71).

Despite the fact that maternal drinking is underreported on the birth certificate, there is nevertheless a distinct pattern of elevated low birthweight levels among mothers reporting alcohol use. The proportion of infants weighing less than 2,500 grams was 14.2 percent for births to drinkers, compared with 7.2 percent for births to nondrinkers. Low birthweight levels increased sharply with greater alcohol consumption. For example, babies born to mothers consuming five drinks or more per week had a 26 percent risk of low birthweight compared with 10 percent of births to mothers reporting one drink or less.

Medical services utilization

Prenatal care

Timely, adequate prenatal care is widely believed to improve birth outcome and may lower the costs and medical complications associated with low birthweight (72–74).

After more than a decade of scant change, 1993 marks the second consecutive year of improvement in prenatal care utilization. The percent of mothers beginning care in the first trimester of pregnancy rose to 79 percent, after rising from 76 to 78 percent between 1991 and 1992. Concurrent with the rise in the early initiation of care, the proportion of mothers whose first visit was delayed until the third trimester, or who had no care at all, declined to less than 5 percent, the lowest level since 1969 when these

data first became available. Improvement in the timeliness of prenatal care was noted for each age group, among both married and unmarried mothers (data not shown), and among nearly all racial and ethnic groups. (See tables 23, 24, and 33–35 for current year data.)

In 1993, 82 percent of white mothers initiated care within the first trimester of pregnancy, a slight increase over 1992 (81 percent). Between 1980 and 1991, this level varied only minimally around 79 percent (75). The proportion of white mothers receiving late or no care was essentially unchanged from 1992, but has declined from 5 to 4 percent since 1991.

First trimester prenatal care increased among black mothers for the second successive year, rising to 66 percent, an increase of 3 percent over the 1992 level (64 percent), and of 6 percent over 1991 (62 percent). The percent of mothers with late or no care declined from 11 to 10 percent between 1991–92, and to 9 percent for the current year. Improvement in the timeliness of care was noted for every age group, but was most pronounced for the age group with the least favorable level—teenaged mothers.

Between 1992 and 1993, the percent of American Indian mothers who initiated care early increased from 62 to 63 percent and the proportion with late or no care declined from 11 to 10 percent. (See table 23 for 1993 data.) Despite these gains, American Indian women were less likely to have early care, and were more likely to have delayed or no prenatal care than women of any other racial or ethnic group.

Among Asian or Pacific Islander's, improvement in prenatal care utilization was observed for each subgroup except Japanese mothers. Nonetheless, levels of care for Japanese women continue to be among the most favorable reported (87 percent received first trimester care, and 3 percent late or no care for 1993). Increases in first trimester care, and very slight declines in the proportion of mothers receiving late or no care were observed for all other API subgroups.

In 1993, 67 percent of Hispanic mothers began care in the first trimester compared with 64 percent in 1992. Since 1991 this level has risen 9 percent. Late or no care among Hispanic mothers declined from 10 to 9 percent between 1992 and 1993 and has dropped by 20 percent since 1991. Increases in early care and declines in late or no care were observed for each Hispanic subgroup for 1991–92 and 1992–93.

Overall, Hispanic prenatal care utilization levels compare unfavorably with most racial or ethnic groups, but vary widely among the Hispanic subgroups. Mexican mothers were the least likely to begin care early (65 percent), and the most likely to have late or no care (10 percent). In contrast, 89 percent of Cuban mothers received first trimester care, and only 2 percent received late or no care.

For women with an uncomplicated pregnancy, monthly prenatal visits are recommended for the first 28 weeks of gestation, every 2–3 weeks until 36 weeks, and weekly visits thereafter (76) or at least 10 visits for an uncomplicated term pregnancy of 37 weeks of gestation or more. The median number of prenatal visits for all pregnancies of 37 or more weeks of gestation in 1993 was 12.3 visits. For all gestations the median number of visits was 12.2, compared with 12.1 for 1992 (see table 35 for 1993 data). Between 1982 and 1987, this measure rose from 11.4 to 12.0, but has fluctuated only slightly since. Increases were observed for both white (12.2 to 12.3 visits) and black mothers (10.7 to 10.9 visits).

Recent gains in prenatal care utilization were also apparent using the Kessner Index, which more accurately assesses prenatal care utilization than timeliness of care alone, because it combines the month prenatal care began with the number of prenatal visits, and adjusts for length of gestation. The index defines care as ''adequate,'' ''intermediate,'' and ''inadequate.'' Over the latest 2-year period, the percent of all mothers with adequate care increased 2 percent a year (from 69 to 72 percent) and inadequate care decreased by 8 percent a year (8.0 to 6.7 percent). Adequate prenatal care increased for both white (73 to 75 percent) and black women (52 to 57 percent) over this period.

Improvements in the timing of first prenatal visit between 1992 and 1993 were observed in most States for both white and black mothers (table 34 for 1993 data). Two notable exceptions to this pattern were Arizona and the District of Columbia where levels of early care declined, and proportions of late or no care increased. Arizona and the District of Columbia also are among the areas reporting the least favorable levels of prenatal care in 1992 and 1993.

Obstetric procedures

The most prevalent obstetric procedure in 1993, reported for over 3.1 million births, or 79 percent of all live births, was electronic fetal monitoring (EFM) (table 36). EFM usage rose in 1993 for the fourth consecutive year for all age groups. Six specific obstetric procedures are reported on the birth certificate. It has been shown that these procedures are underreported (44).

In 1993, 71 percent of mothers who had repeat cesarean sections had EFM, compared with 80 percent for primary cesarean sections and 87 percent for vaginal births after cesarean section (VBAC) (tabular data not shown). White mothers had the highest (79 percent) and Filipino mothers had the lowest (70 percent) rates of EFM usage (table 26). Among Hispanic mothers the lowest rate was for Mexican mothers (68 percent) and the highest rate was for Puerto Rican mothers (82 percent) (table 27).

According to data from the birth certificate, 60 percent of mothers who had live births in 1993 received ultrasound, a 25 percent increase over 1989 (48 percent). Chinese, Hawaiian, and Filipino mothers had the lowest rates of ultrasound usage (53 percent) and white mothers had the highest rates (62 percent) (table 26). Mexican and Central and South American mothers have the lowest rates of all Hispanic groups at 43 percent (table 27).

The overall rates of stimulation of labor and induction of labor in 1993 were 138 and 134 per 1,000 live births, respectively. Mothers 25–29 years of age had the highest rate of stimulation of labor (141 per 1,000) and mothers 40–49 years of age had the lowest rate (123 per 1,000). Rates for stimulation of labor were highest for white mothers (142 per 1,000) and lowest for Filipino mothers (115 per 1,000). Induction of labor rates had a slightly larger range by age, from

116 for the youngest mothers to 144 for the oldest mothers. White mothers had the highest rates for induction of labor (143 per 1,000) while Chinese mothers had the lowest (81 per 1,000). Both of these procedures were more likely to be used for births where infant birthweight was high. The range in rates between infants weighing less than 2,500 grams (low birthweight) and those over 4,000 grams was from 90 to 144 per 1,000 live births for stimulation and from 104 to 184 for induction (tabular data not shown).

Amniocentesis, an invasive prenatal diagnostic procedure performed to detect genetic disorders, was reported for 32 of every 1,000 live births in 1993. The rate of amniocentesis for the oldest age group (40–49 years of age) was 20 times the rate for the youngest mothers (less than 20 years of age), 196 per 1,000 compared with 10 per 1,000. Similar differences by age were observed for white mothers. For black mothers the difference between the oldest and youngest age groups was 13-fold. Japanese mothers had the highest rate (74 per 1,000) while black mothers had the lowest (17 per 1,000). Non-Hispanic white mothers had a rate more than 3 times the rate for Mexican mothers (39 compared with 12 per 1,000).

Tocolysis, which is used to delay labor, was the least prevalent (19 per 1,000 live births) of the procedures identified on the birth certificate. White mothers were more likely than black mothers to have received tocolysis (19 and 16 per 1,000). By age the highest rates in 1993 were for black mothers 30–34 years of age and white mothers under 20 years of age (16 and 22 per 1,000). Over one third of mothers who had tocolysis, used to inhibit preterm uterine activity, still delivered preterm.

Rates for the six selected procedures vary by the education of mother, birthweight, and gestational age of the infant (tabular data not shown). All of these procedures had higher rates for mothers with 12 or more years of education compared with mothers who had less schooling. The rates for amniocentesis showed the greatest percent difference between mothers with 12 or more years of education and mothers with less education (37 and 13 per 1,000 live births, respectively). Mothers giving birth to low birthweight (less than 2,500 grams) or preterm (less than 37 completed weeks of gestation) infants were much more likely than those giving birth to normal birthweight or full-term births to have had amniocentesis (1.8 and 1.7 times greater) or tocolysis (5.1 and 4.6 times greater).

Complications of labor and/or delivery

Of the 15 reported complications of labor and/or delivery, 6 were reported at a rate greater than or equal to 30 per 1,000 live births in 1993: Meconium, moderate/heavy (58 per 1,000), fetal distress (42 per 1,000), breech/malpresentation (38 per 1,000), cephalopelvic disproportion (30 per 1,000), premature rupture of membrane (PROM) (31 per 1,000), and dysfunctional labor (30 per 1,000) (table 37). It has been shown that levels of these complications may be underreported on the birth certificate (44).

For these six complications there were observable variations by race and Hispanic origin (tables 26 and 27). Black mothers had the highest rates of all races for meconium (81 per 1,000) and fetal distress (54 per 1,000), American Indian mothers for PROM (44 per 1,000) and dysfunctional labor (33 per 1,000), white mothers for breech/malpresentation (40 per 1,000), and Filipino mothers for cephalopelvic disproportion (42 per 1,000). Japanese mothers had the lowest rates of all races for meconium (41 per 1,000) and PROM (22 per 1,000), Hawaiian mothers for dysfunctional labor (16 per 1,000) and fetal distress (22 per 1,000), black mothers for breech/malpresentation (29 per 1,000), and American Indian mothers for cephalopelvic disproportion (24 per 1,000). By Hispanic origin, Mexican mothers had the lowest rates for PROM (18 per 1,000) and dysfunctional labor (25 per 1,000). Cuban mothers had a noticeably higher rate than other Hispanic mothers for dysfunctional labor (51 per 1,000), 28 percent higher than in 1992 (40 per 1,000).

Distinctions by age of mother were observed in the rates of three of the six most prevalent complications. The highest rates of meconium and fetal distress were for the youngest (under 20 years of age) and oldest (40–49 years of age) mothers, and the lowest rates were for mothers in the middle years of childbearing (25–34 years of age). The oldest mothers had the highest rates of breech/malpresentation while the lowest rates were for the youngest mothers (54 and 29 per 1,000, respectively).

Although not frequent, placenta previa is a serious complication and occurred in over 69,000 births between 1989 and 1993 (3.4 per 1,000 live births). Increasing age of mother and live-birth order have been shown to increase the risk of this complication (77).

Of the 6 most prevalent complications, 4 occurred more often to mothers with 13 or more years of education than for mothers with lower educational attainment (breech/malpresentation, dysfunctional labor, PROM, and cephalopelvic disproportion) and two (meconium and fetal distress) occurred more often to mothers with less than 13 years of education (data not shown).

Rates for four complications (meconium, prolonged labor, dysfunctional labor, and cephalopelvic disproportion) were lower for low-birthweight infants (less than 2,500 grams) than for infants weighing 2,500 grams or more. Of the remaining 11 complications, which had higher complication rates for low-birthweight infants, 4 (PROM, abruptio placenta, placenta previa, and seizures during labor) had rates at least 4 times those of infants weighing 2,500 grams or more. These same four complications with considerable differences by birthweight also had large differences (3 to 8 times as high) in rates for infants born preterm (less than 37 completed weeks of gestation) when compared with term births.

Attendant at birth and place of delivery

Although the vast majority of births in the United States are delivered by a physician in a hospital setting, the proportion of such births has been steadily declining, with a concomitant increase in midwife-delivered hospital births. In 1993, 93.9 percent of births were attended by physicians (medical doctors (M.D.'s) and doctors of osteopathy (D.O.'s)) in hospitals compared with 94.2 percent in 1992 and 98.4 percent in 1975, the first year for which comparable

data are available. During this time period, births attended by midwives in hospitals rose from 0.6 percent in 1975 to 4.4 percent in 1992, and to 4.8 percent in 1993, 8 times as high as in 1975 (table 38).

The proportion of all births delivered in hospitals was 99.0 percent in 1993, a level that has been nearly constant since 1975. Black mothers were slightly more likely than white mothers to give birth in a hospital (99.2 percent compared with 98.9 percent), while a slightly higher proportion of white than black mothers chose to give birth in a birthing center (0.3 percent compared with 0.1 percent) or at home (0.7 percent compared with 0.6 percent). Hospital delivery was also nearly universal for other racial and ethnic groups: 99.6 percent of births to Filipino mothers; 99.5 percent of births to Chinese mothers; 99.4 percent of births to Japanese and Hawaiian mothers; 99.2 percent of births to American Indian mothers; and 99.1 percent of births to ''other'' Asian and Pacific Islander mothers. Only 0.2 percent or less of the births of these racial groups were delivered in birthing centers, while the proportion of births delivered at home ranged from a low of 0.2 percent of Chinese and Filipino mothers, to 0.4–0.6 percent of Japanese, Hawaiian, ''other'' Asian or Pacific Islander, and American Indian mothers.

Of Hispanic mothers, Cuban mothers were the most likely to deliver in a hospital (99.7 percent), and Mexican mothers the least likely (98.9 percent); 99.4–99.5 percent of Puerto Rican, Central or South American, and ''other'' and unknown Hispanic mothers had a hospital delivery. Delivery in a birthing center was chosen by 0.1–0.2 percent of all Hispanic mothers except Mexicans (0.6 percent), while 0.2 to 0.4 percent of Hispanic mothers chose to deliver at home.

Although births to mothers in freestanding birthing centers are a very small proportion of all births (0.3 percent in 1993), this setting remains of considerable interest as a safe and cost-effective alternative to hospital delivery for low-risk women (78).

Births in private residences (home births) also comprised only a very small proportion of all births in 1993 (0.6 percent), the same proportion as in 1992, and essentially the same as in the 1989–91 period (0.7 percent). The mix of attendants in home deliveries in 1993 was very similar to that observed in 1992: 17.7 percent physicians, 43.7 percent midwives, and 38.6 percent other attendants.

Since 1989 information has been available for D.O.-attended births. The proportion of such births has remained relatively constant since 1991 (3.4 percent in 1993 versus 3.3 percent in 1991), but was slightly higher in 1993 than in 1989 when it was 2.8 percent.

Maternal demographic, socioeconomic, and health characteristics differ widely by place of delivery. Mothers giving birth in hospitals tend to be younger than mothers who deliver in birthing centers or at home. Births to teenagers comprised 12.9 percent of all hospital births in 1993, but only 8.2 percent of births in birthing centers and 6.9 percent of home births. Mothers delivering in a hospital were also more likely to deliver their first birth (40.9 percent) than mothers delivering in a birthing center (32.0 percent) or than mothers delivering at home (19.0 percent). There was a higher proportion of births in hospitals to unmarried mothers (31.1 percent) than in birthing centers (13.8 percent) or in home deliveries (24.7 percent).

There is also a wide variation in the educational attainment and adequacy of care for mothers delivering in different settings. Only 6.3 percent of mothers delivering in a hospital had minimal education (less than 9 years of schooling) compared with 17.6 percent of mothers delivering in a birthing center and 15.5 percent of mothers delivering at home. Of mothers delivering in a hospital, 19.5 percent had completed at least 16 years of schooling compared with 20.9 percent of mothers delivering in a birthing center and 21.4 percent of mothers delivering at home. As measured by the Kessner Index (see section on Prenatal Care for definition), mothers delivering in a hospital were substantially more likely to receive adequate prenatal care (71.8 percent) than mothers giving birth in a birthing center (55.7 percent) or than mothers delivering at home (43.0 percent).

Method of delivery

Since 1989, the National Center for Health Statistics (NCHS) has collected data on the method of delivery from the birth certificate. In 1993, 78.2 percent of births were delivered vaginally and 21.8 percent of births were cesarean deliveries. About 37 percent of cesarean deliveries in 1993 were repeat deliveries for women who had a prior cesarean (table 39).

The overall rate of cesarean delivery in 1993 (21.8) was 2 percent lower than in 1992 (22.3) and 5 percent lower than in 1989 (22.8) (table 39). The drop in the overall rate since 1989 reflects a decline in the rate of primary cesarean delivery (first cesareans per 100 live births to women who had no previous cesarean) and an increase in the rate of vaginal births following a previous cesarean delivery (VBAC). In 1993 the rate of primary cesarean delivery was 15.3, 5 percent lower than in 1989 (16.1), while the rate of VBAC deliveries increased from 18.9 in 1989 to nearly a quarter of the births in 1993 (24.3 percent). Rates of cesarean and VBAC deliveries for 1993 derived from NCHS's National Hospital Discharge Survey were very similar to those of vital statistics (22).

Although both the overall and primary cesarean rates are declining, they are still much higher than the year 2000 objectives of 15 or less for the overall rate and 12 or less for the primary rate (79). While the majority of States have rates of 20 or higher, there are 17 States with rates below 20 and two of these States are approaching the overall goal. Alaska and Colorado had cesarean delivery rates of 15.2 and 15.4, respectively. For the primary cesarean rate, nine States had rates around or below the year 2000 goal compared with seven States in 1992. The year 2000 objective for a VBAC rate of 35 (79) was met or exceeded by five States in 1993 compared with four States in 1992.

The overall rate of cesarean delivery increased steadily with increasing age of the mother and comprised almost a third of births to mothers 40–49 years of age (table 40). Possible explanations for the higher rates of cesarean delivery for older mothers have been attributed to

physiological changes due to aging as well as to the perception of the mother and her physician that she is at a higher risk for more adverse birth outcomes than younger mothers (80). Primary cesarean rates also consistently rose with age of the mother, from 13.9 for teenaged mothers to 22.7 for mothers 40–49 years of age. In contrast, VBAC rates were at their peak for teenaged mothers (28.4) and dropped with increasing age.

For every age category over 20 years, first-order births had higher rates of cesarean delivery than second-order births which in turn had higher rates than third-order births (figure 4). Mothers having their first birth at 35–39 or 40–49 years of age had the highest rates of cesarean delivery—38 and 46 percent, respectively. Births to teenaged mothers, especially second- and higher-order births, had the lowest rates of cesarean delivery. The increase in rates of cesarean delivery by age were more pronounced for first births than second and third births.

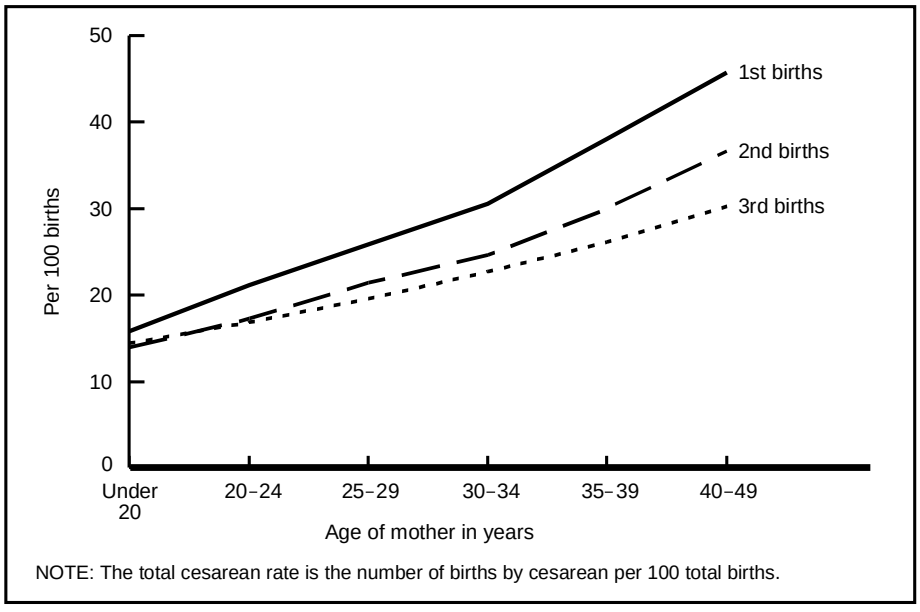
The small disparity in 1989 between white and black mothers in cesarean delivery rates (22.8 and 22.0, respectively) has since disappeared and the rates were virtually identical in 1993. Between 1989 and 1993 the rate for white women declined 4 percent, to 21.9, while the rate for black women remained steady at around 22 for each year. For every age category, the overall cesarean delivery rates were slightly higher for black than white mothers. The primary cesarean rate in 1993 was slightly higher for black women and the VBAC rate was slightly lower. Black mothers under 25 years of age were slightly more likely than their white counterparts to have a VBAC delivery, but the pattern reversed for mothers 25 years of age and over.

The similarity between white and black women in rates of cesarean and VBAC deliveries are the result of offsetting factors (42). Black mothers are more likely than white mothers to be unmarried and to be under 20 years of age, both of which are associated with lower than average rates of cesarean delivery. However, black women are also more likely to have low and very low birthweight babies as well as premature babies, factors associated with higher than average rates of cesarean delivery.

With the exception of Filipino mothers, all specified categories of Asian or Pacific Islander (API) mothers had lower rates of cesarean delivery than white and black mothers (table 23). The rate of cesarean delivery for API mothers ranged from 23.7 for Filipino mothers to 17.9 for Hawaiian mothers and 17.7 for ''other'' API mothers. Part of the reason for the higher rate for Filipino mothers than for white or black mothers is that a larger percent of these women were 35 years of age or older and, as discussed above, older mothers are more likely to have cesarean deliveries. In addition, the cesarean rates for mothers over 35 years of age were higher for Filipino women than for their white and black counterparts (tabular data not shown). The rate of cesarean delivery for American Indian mothers (17.9) was among the lowest of any specified racial category.

Rates of cesarean delivery were slightly lower for Hispanic than non-Hispanic mothers—20.9 compared with 22.0 per 100 births (table 24). Except for Cuban mothers, who had an elevated rate of cesarean delivery (31.6), there was very little variation among most Hispanic subgroups—ranging from 20.3 for Mexican mothers to 21.9 for ''other'' and unknown Hispanic mothers.

The total and primary cesarean delivery rates and the VBAC rates for selected medical risk factors, complications of labor and delivery, and obstetric procedures are shown in table 41. All of these medical risk factors are associated with cesarean delivery rates that are higher than the national average, ranging from 50.7 per 100 births for eclampsia to 22.6 for Rh sensitization. Medical risk factors in which more than a third of the births were cesarean deliveries were chronic and pregnancy-related hypertension (40.0 and 38.9, respectively), genital herpes (39.9), and diabetes (35.9). There were ten complications of labor and delivery in which more than a third of the births were delivered by cesarean, eight of which had rates of cesarean delivery of more than 50 percent—cephalopelvic disproportion (97.6), breech/malpresentation (85.2), placenta previa (82.9), dysfunctional labor (67.4), cord prolapse (67.2), fetal distress (58.9), abruptio placenta (58.8), and seizures during labor (50.6). Amniocentesis was the only obstetric procedure associated with a cesarean rate of more than a third (34.8), although two others had rates of cesarean delivery that were higher than the national average—tocolysis (28.0) and ultrasound (23.7). Part of the reason for the elevated rate for amniocentesis is that this procedure is much more frequent for older than younger mothers. Rates of cesarean delivery for all the risk factors, complications, and obstetric procedures in table 41 have changed very little since 1989 (15,56–58).



NOTE: The total cesarean rate is the number of births by cesarean per 100 total births.

Figure 4. Total cesarean rates by age of mother and live-birth order: United States, 1993

The percent of births that were delivered by forceps has declined every year since 1989 from 5.5 percent in 1989 to 4.1 percent in 1993. The trend in the use of vacuum extraction has been opposite that of forceps—the percent has increased each year since 1989, from 3.5 percent of births in 1989 to 5.3 percent in 1993. As in previous years, forceps and vacuum-extraction deliveries were slightly more common in births to white mothers than in births to black mothers. Differences between races in the birthweight of the baby may explain part of the disparity. Babies of low birthweight (less than 2,500 grams) are much less likely to be delivered by forceps or vacuum extraction than other babies and black mothers are more likely than white mothers to have low-birthweight infants. However, even when the birthweight of the infants is considered, racial differences still persist (tabular data not shown).

Infant health characteristics

Period of gestation

For 1993, 11.0 percent of all births were born preterm (less than 37 completed weeks of gestation), a 3-percent increase over the 1992 level of 10.7 percent. Since 1981 (the first year for which comparable data are available) the proportion of preterm births has risen 17 percent (tables 42 and 43). To keep this change in perspective, a preterm rate for 1993 equal to that for 1981 (9.4 percent) would have resulted in about 63,000 fewer preterm births. These infants are about 30 times less likely to survive the first month of life than are term infants (37–41 completed weeks of gestation), and those that survive are at higher risk of life-long morbidity (81–83).

Period of gestation is measured by an item on the birth certificate asking for the first day of the mother's last menstrual period (LMP). When the gestation computed from the LMP date is incompatible with the birthweight, information from the clinical estimate of gestation (also on the birth certificate) may be used. These items are discussed in more detail in the Technical notes. An additional factor in evaluating gestation information is the increased use of ultrasound to determine gestation. Other studies have suggested that the gestation period determined by the LMP date and ultrasound generally agree for deliveries at 37–40 weeks of gestation, but that ultrasound generally identifies more preterm births than does LMP-based gestation (84). Thus, the actual level of preterm births identified from the LMP date may be lower than it would be if based on ultrasound.

The shorter the length of gestation, the more likelihood that the newborn will be low birthweight (less than 2,500 grams). For 1993, 95 percent of extremely preterm infants (less than 28 completed weeks of gestation) were low birthweight compared with 38 percent of those born at 28–36 weeks, and 3 percent of term infants (table 42). These levels did not differ appreciably from those observed for 1992.

The percent of preterm births increased between 1992 and 1993 for each maternal age group except for mothers under 15 years of age, for whom the level declined very slightly. As in previous years, age-specific preterm birth rates follow a pattern very similar to those for low birthweight with the youngest and oldest mothers at greatest risk. To illustrate, 23 percent of mothers under 15 years of age gave birth prior to 37 completed weeks of gestation in 1993, compared with 10–11 percent of mothers in their twenties, and 13 percent of mothers 40 years of age and over (data not shown).

Among infants born to white mothers, the preterm birth rate rose 4 percent (9.1 to 9.5 percent) between 1992 and 1993, continuing the generally upward trend observed since 1981 (7.9 percent). There was no increase for infants born at less than 28 completed weeks of gestation, a group at higher risk of poor outcome; the preterm increase was entirely due to an increase for infants born between 28 and 36 weeks of gestation.

The preterm birth rate among births to black mothers was essentially unchanged, rising from 18.4 percent in 1992 to 18.5 percent in 1993. The 1992 level marked a decline that followed 4 years when rates hovered at 18.7–18.9 percent. Since 1981, the preterm birth rate for black infants has risen by 7 percent and has included increases in both extremely preterm infants and those born at 28–36 weeks of gestation.

The 20-percent rise in the preterm rate for births to white mothers between 1981 and 1993 can be only partly explained by the shift toward older age of childbearing and by increases in the proportion of multiple births (see section on multiple births), both of which have been identified as potential risk factors for preterm birth (84). Standardization of the preterm rate for births to white mothers to adjust for these demographic changes reveals that 3 percent of the rise in the preterm rate can be attributed to changes in maternal age and 17 percent to the rise in multiple births (data not shown). For births to black mothers as with births to white mothers, only a modest share of the increase in the preterm rate for black births between 1981 and 1993 can be attributed to changes in the maternal age distribution (12 percent) or in the multiple birth ratio (9 percent).

Preterm rates rose for almost all racial and national origin groups between 1992 and 1993. The preterm rate for births to American Indian mothers for 1993 was 12.2 percent, a 5-percent increase over the figure reported for 1992 (11.6 percent). Increases spanned all age groups.

Very slight increases in the percent of preterm births between 1992 and 1993 were observed for each Asian or Pacific Islander subgroup. Among these groups, preterm rates ranged from 7.2 percent for births to Chinese mothers to 11.2 percent for births to Filipino mothers.

Among Hispanics, the percent of preterm births was 11.0 percent, up from the 10.7 percent reported for 1992. Increases of 2–4 percent were observed for each subgroup except Puerto Rican, which was essentially unchanged. For 1993, levels ranged from 10.4 percent for Cuban mothers to 13.3 percent for Puerto Rican mothers (table 24).

Birthweight

The overall rate of low birthweight (less than 2,500 grams) rose to 7.2 percent for 1993, the highest level reported since 1976 (table 43 for 1993 data and figure 5). Low birthweight is the result of preterm birth, intrauterine growth retardation (small for gestational age), or both, and is a strong predictor of infant

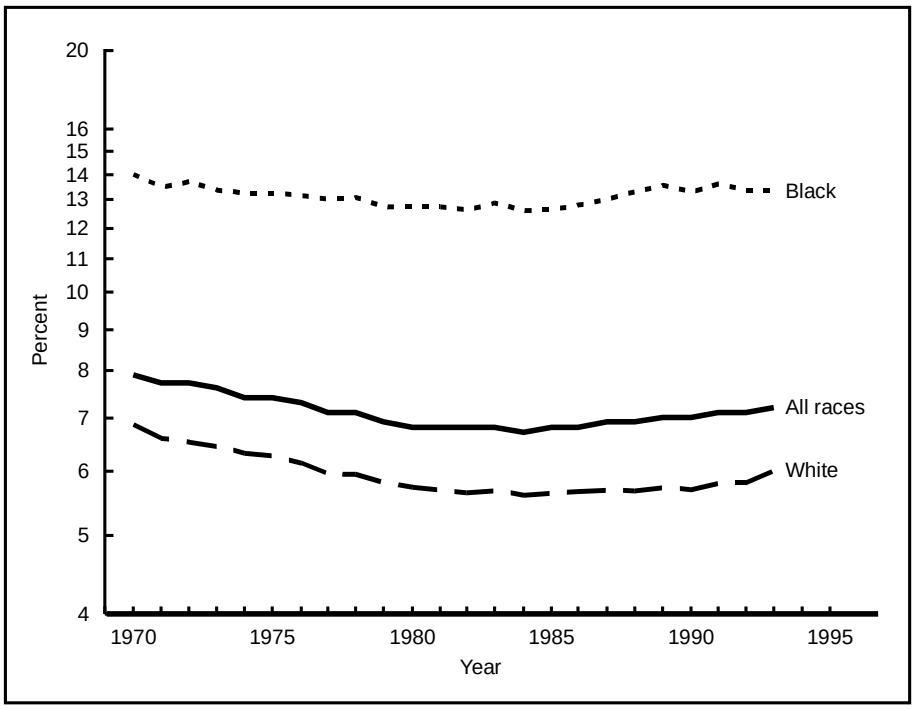


Figure 5. Percent low birthweight by race: United States, 1970–93

morbidity and mortality (81,85). Infants born weighing less than 2,500 grams account for more than three-fourths of all neonatal deaths (82).

Most of the overall increase in low birthweight between 1992 and 1993 (from 7.1 to 7.2 percent) can be attributed to the rise in low birthweight among white births, which increased by 3 percent (from 5.8 to 6.0 percent). Slight increases in white low birthweight were observed for most age groups and for both singleton and plural births. Low birthweight among infants born to black mothers was unchanged at 13.3 percent.

The proportion very low birthweight (less than 1,500 grams) was essentially the same as in 1992 (1.3 percent), although very small increases for each 500-gram interval under 2,500 grams were observed. Very low birthweight rates among both white (1.0 percent) and black births (3.0 percent) were the same as those for 1992. The proportion macrosomic (infants weighing at least 4,000 grams) declined from 10.7 to 10.5 percent from 1992 (table 23 for 1993 data). The decline in high birthweight was particularly marked among white infants (12.1 to 11.8 percent). Macrosomia has been associated with increased risk of cesarean delivery and infant morbidity (42).

Between 1980 and 1993, the overall low birthweight level rose from 6.8 to 7.2 percent, whereas the level for singleton births was virtually unchanged (5.96 compared with 6.01 percent). The stability of singleton low birthweight indicates that nonsingleton or multiple births, despite their comparatively small numbers, influenced the upward trend in overall low birthweight levels during this period. The principal reason for this heightened influence is the substantial increase in the multiple birth ratio (the number of multiple births per 1,000 births) from 19.3 to 25.2 per thousand (see section on multiple births for more detail). Multiple births are 9 times more likely to be low birthweight than are singleton births (54.1 compared with 6.0 percent), and the low birthweight risk of multiple births rose slightly during this period (from 51.8 in 1980), further increasing the influence of multiple births on overall low birthweight levels.

A similar but more pronounced pattern was noted among births to white mothers, which, because they account for a large proportion of all births (79 percent), tend to drive overall trends. In short, while overall low birthweight levels for white births rose from 5.7 to 6.0 percent between 1980 and 1993, low birthweight among singleton white births declined very slightly (from 4.9 to 4.8 percent).

The increase in the multiple birth ratio explains only part of the rise in low birthweight among infants born to black mothers, however. Among black births both overall and singleton low birthweight levels increased, although levels for singletons increased at a slower pace. While overall low birthweight rose among births to black mothers from 12.7 to 13.3 percent, singleton low birthweight rose from 11.5 to 11.8 percent. A recent study found that about one-third of the increase in low birthweight for black infants can be attributed to increases in the multiple birth ratio for births to black mothers (86).

For 1993 as in earlier years, the risk of low birthweight was greatest for the youngest and oldest mothers (table 44). Age-specific low birthweight patterns differed quite markedly by race, however. Among white mothers, the percent low birthweight was highest for teenaged mothers (7.7 percent) and lowest for mothers 25–34 years of age (5.3–5.6 percent), and the low birthweight rate for older white mothers did not approach that of teenaged mothers until the age of 40 years. In contrast, age-specific low birthweight rates among infants born to black mothers were lower for teenagers than for mothers 30 years of age and over; black mothers 20–24 years of age were the least likely to have a low birthweight child (12.1 percent). Age-specific low birthweight rates for black births were at least 50 percent higher than white births for each 5-year age group.

Numerous studies have addressed the black/white disparity in low birthweight, but the causes for this disparity are not fully understood (87). Although low birthweight risk is much higher among preterm infants and the risk of preterm birth for black infants is about twice that for white infants, the greatest black/white low birthweight disparity is found among term infants. For 1993, 39.8 percent of white compared with 47.5 percent of black preterm infants were low birthweight. Among term infants, 2.5 percent of white infants were low birthweight compared with 5.7 percent of black infants (table 42). This large differential in term low birthweight is not reduced

even after adjusting for several potential confounding factors. For example, black college-educated mothers with the recommended weight gain, timely prenatal care, and at least 18 months since their last live birth were 2 1/2 times as likely to have a term low birthweight infant as were white women with similar pregnancy-risk characteristics (data not shown).

The median weight at birth in 1993 was 3,360 grams, unchanged for the third consecutive year. For infants born to white mothers the median declined by 10 grams to 3,400 grams, the lowest median reported since 1979. The median birthweight for infants born to black mothers was unchanged from 1992 at 3,170 grams.

The low birthweight rate for infants of American Indian mothers rose 0.2 percentage points from the previous year to 6.4 percent, the highest level reported since 1980. (See table 23 for 1993 data.) The percent very low birthweight also increased slightly from 1.0 to 1.1 percent. The proportion of American Indian infants that were macrosomic (birthweight of at least 4,000 grams) also rose slightly from 12.3 to 12.5 percent between 1992 and 1993. The proportion macrosomic among American Indian women was comparable to that of non-Hispanic white mothers (12.4 percent)—the highest levels reported.

Overall rates of low and very low birthweight (6.6 and 0.9 percent, respectively) among Asian or Pacific Islander (API) births were unchanged from 1992. (See table 23 for current year data.) Among API infants, low birthweight levels ranged from 4.9 percent for births to Chinese mothers—the lowest level reported for any racial or ethnic group—to 7.0 percent for births to Filipino mothers. The proportion low birthweight declined slightly for each API subgroup except ''other'' API for whom it rose from 6.7 to 6.9 percent.

For 1993, 6.2 percent of births to Hispanic mothers were low birthweight compared with 6.1 for 1992 (table 24). Hispanic low birthweight has remained constant at 6.1–6.3 percent since 1980. The proportion of Hispanic births born very low birthweight was essentially unchanged from 1992 (1.1 percent). Slight increases in low birthweight were observed for each Hispanic subgroup except Puerto Rican, which was unchanged at 9.2 percent. The wide variation in pregnancy-related risk factors and birth outcomes among Hispanics is illustrated by the low birthweight rates that ranged from 5.8 percent for births to Mexican mothers to 9.2 percent for births to Puerto Rican mothers.

The considerable variation in overall low birthweight by State can be attributed in part to State-to-State variation in the distribution of births by age and race. Younger mothers and black mothers tend to bear smaller infants, thus, States with higher proportions of younger and black mothers are more likely to have higher overall low birthweight levels.

Between 1992 and 1993, 45 of 51 reporting States reported either an increase or no change in white low birthweight rates. (See table 16 for current year data.) The only States reporting sizable declines were New Hampshire (5.2 to 4.9 percent), Idaho (5.5 to 5.2 percent), and Hawaii (5.4 to 5.2 percent). States with at least 1,000 black births were about evenly divided between those for which levels declined and those for which levels rose. Notable decreases in black low birthweight occurred in Connecticut (14.0 to 12.3 percent) and Colorado (16.9 to 14.9 percent).

Interval since last live birth

Closely spaced births have been associated with adverse pregnancy outcome such as low birthweight, preterm birth, intrauterine growth retardation, and perinatal mortality (88,89). For 1993, 12.5 percent of all second- and higher-order births were born within 17 months of a previous live birth, a decline from the 1992 level of 13.2 percent, and the lowest level reported since 1987 (also 12.5 percent). (See table 10 for 1993 data.) The proportion of births born at this interval declined among both births to white mothers (11.7 to 11.1 percent) and births to black mothers (19.6 to 18.4 percent) between 1992 and 1993. The proportion of births born at the shorter interval of within 11 months of the last birth also decreased very slightly from the previous year from 1.8 to 1.7 percent (data not shown). Small declines were observed among both births to white mothers (1.4 to 1.3 percent) and births to black mothers (3.6 to 3.4 percent).

For 1993, 20.2 percent of infants born at an interval of 1–11 months and 7.5 percent of infants born at 12–17 months were low birthweight. Comparatively, only 4.6 percent of infants born 24–47 months after a previous live birth were low birthweight.

Brief interbirth intervals are not only more common among black than among white mothers, but black infants born at short intervals bear a greater low birthweight risk than similarly spaced white infants. For example, 30.3 percent of births to black mothers compared with 15.3 percent of births to white mothers born within 11 months of a previous birth were low birthweight in 1993. However, this racial disparity is not reduced at more favorable intervals; for birth spacings of 24–47 months the risk of low birthweight was nearly 3 times as great for black as for white infants (10.4 percent compared with 3.6 percent).

Apgar score

The Apgar score is a means of evaluating the physical condition of a newborn at 1 and 5 minutes after delivery. The score considers five characteristics of the baby that are easily identifiable—the baby's heart rate, respiratory effort, muscle tone, reflex irritability, and color. Each of these characteristics is assessed and assigned a value of 0–2, with 2 being optimum. The total score is the sum of the scores of the five components and a score of 7 or greater indicates that the baby is in good to excellent physical condition. The Apgar score, especially the 5-minute score, is used to predict babies' long-term health conditions and survival chances (90).

All States except California and Texas reported both the 1- and 5-minute Apgar scores on their birth certificates in 1993. Of the births in the reporting States (which accounted for 77 percent of all births in the United States), 8.4 percent of babies had 1-minute Apgar scores that were considered low, less than 7, while 1.4 percent had low 5-minute Apgar scores (table 23). Babies that weighed more than 2,500 grams had better Apgar scores than babies of low (less than 2,500

grams) and very low birthweight (less than 1,500 grams). Only 7 percent of normal birthweight babies had low 1-minute Apgar scores compared with 28 percent of low birthweight babies and 70 percent of very low birthweight babies. Regardless of birthweight, the physical condition of babies generally improved between 1 and 5 minutes after birth as shown by the 5-minute Apgar scores. Only 1 percent of normal birthweight babies had low 5-minute Apgar scores, compared with 10 percent of low birthweight babies, and 38 percent of very low birthweight babies. Low birthweight babies are more likely to have abnormal conditions that would place their physical condition at a greater risk than babies that weigh more than 2,500 grams (discussed in next section) (tabular data not shown).

Black mothers had proportionately more babies with 1- and 5-minute Apgar scores of less than 7 than any racial group while Asian or Pacific Islander (API) mothers had the smallest proportion (table 23). The API subgroups whose babies were in the best physical condition shortly after delivery were Chinese and Japanese mothers—about 5 percent of these babies had low 1-minute Apgar scores and only 1 percent had low 5-minute Apgar scores. As also shown in table 23, lifestyle risk factors that are associated with adverse birth outcomes (e.g., smoking and drinking during pregnancy and inadequate weight gain) are generally less frequent for API mothers than for other racial groups and this accounts somewhat for the better physical condition of their babies.

The percent of babies with 1- and 5-minute Apgar scores of less than 7 was slightly lower for Hispanic than non-Hispanic mothers (table 24). Of all Hispanic subgroups, Cuban mothers had babies that were in the best physical condition at both 1 and 5 minutes after delivery—about 5 percent of these babies had low 1-minute Apgar scores, while less than 1 percent had low 5-minute Apgar scores. Cuban mothers are among the lowest of any racial group in the percent that had late or no prenatal care, smoke and drank during pregnancy, and gained an inadequate amount of weight (table 24).

Abnormal conditions of the newborn

The abnormal conditions of the newborn with the highest rates per 1,000 live births in 1993 were assisted ventilation less than 30 minutes (18 per 1,000), assisted ventilation 30 minutes or longer (8 per 1,000), and hyaline membrane disease/respiratory distress syndrome (RDS) (7 per 1,000) (table 45). Eight specific abnormal conditions are reported on the birth certificate. It has been shown that these conditions are underreported (44).

The rates for abnormal conditions in 1993 were higher for black births than for white births for all conditions except birth injuries. The highest rates by age for hyaline membrane disease/RDS, assisted ventilation less than 30 minutes, and assisted ventilation 30 minutes or longer, were for the youngest mothers (under 20 years of age). Meconium aspiration syndrome, which is associated with increased neonatal morbidity and mortality (90), had the highest rates for the oldest mothers (40–49 years of age).

Birth injury was the only abnormal condition that had lower rates among low birthweight infants (less than 2,500 grams) as compared with infants weighing 2,500 grams or more. Rates of hyaline membrane disease/RDS were far higher for low birthweight infants than those of higher weight (56 compared with 3 per 1,000 live births). There were similar large differences in rates by birthweight for assisted ventilation 30 minutes or longer (63 and 4 per 1,000 live births). The rates of hyaline membrane disease/RDS and assisted ventilation 30 minutes or longer also were far higher for preterm births (less than 37 completed weeks gestation) than for term births (tabular data not shown).

Assisted ventilation less than 30 minutes was the only condition with noticeable differences by education of mother (data not shown here). Mothers with 0–8 years of education had a rate of 11 per 1,000 live births compared with 18 for mothers with more education. This large difference is explained, in part, by the high proportion of mothers with 0–8 years of education who were Hispanic (65 percent) and the low rate of this condition for these Hispanic mothers (7 per 1,000). For non-Hispanic white and non-Hispanic black mothers with 0–8 years of education the rates were 22 and 19 per 1,000, respectively.

Congenital anomalies

Since 1989, information for some of the most severe and common congenital anomalies has been available from a checkbox item on live birth certificates. The checkbox format replaced a previously open-ended question to improve completeness and uniformity of reporting. Although several recent studies found that this format does not ensure complete reporting of anomalies (44, 92–93), information from live birth certificates can be used to analyze the relationship between the occurrence of anomalies and a variety of descriptive variables. In 1993 the birth certificates of the District of Columbia and all States except New Mexico and New York contained an item on congenital anomalies. These areas included 92 percent of the births in the United States.

Congenital anomaly rates shown in this report are calculated per 100,000 live births because many of the anomalies studied occur infrequently. Caution should be used in comparing yearly rates for a specific anomaly because in some areas reporting practices can vary over time. A small yearly change in the number of defects reported can result in a relatively large change in rates.

As noted in previous years, rates for many of the anomalies reported on birth certificates vary considerably by maternal age (table 46). Notable examples of anomalies for which rates increase rapidly with advancing maternal age are heart malformations and chromosomal anomalies. For heart malformations, the rate for births to women aged 40–49 years (214 per 100,000) is about twice the rate for births to women under 30 years of age (98–110 per 100,000). The Down's Syndrome rate for births to women aged 35–39 years (101 per 100,000) was 3 to 4 times that for births to women under 30 years of age (26–34 per 100,000), and the rate for births to

women aged 40–49 years (397 per 100,000) was 12 to 16 times as high as that for births to younger women. The rate for ''other'' chromosomal anomalies was 4 times as high for births to women aged 40–49 years (151 per 100,000) as compared with births to women under 30 years of age (36–40 per 100,000). However, for a number of anomalies (e.g., spina bifida/meningocele, hydrocephalus, omphalocele/gastroschisis), rates generally decline for births to older women, consistent with the decrease in incidence of these anomalies to mothers with higher educational attainment.

Birthweight is strongly related to the incidence of congenital defects, with rates generally declining with added weight up to 3,999 grams, but then rising for birthweights of 4,000 grams or more. For example, the rate of heart malformations among infants weighing less than 1,500 grams at birth was 546 per 100,000 births, 6 times as high as for birthweights of 3,000–3,999 grams (85–89 per 100,000). The greatest dissimilarity in rates by birthweight is evident for anencephalus. The incidence of this defect was nearly 40 times as high for babies weighing less than 1,500 grams (226 per 100,000) as for babies weighing 3,000–3,499 grams (6 per 100,000).

Infants born with a congenital anomaly generally have a far higher risk of having a very low (less than 1,500 grams) or low birthweight (less than 2,500 grams) than other infants. Twenty of the 21 congenital anomalies categories included on birth certificates had an associated very low birthweight risk of at least double the very low birthweight rate of 1.3 percent for all infants; 18 of these categories had an associated low birthweight rate at least double the average for all births of 7.2 percent.

The increased incidence of congenital anomalies for low and very low birthweights is consistent with the level of anomalies by period of gestation. For all anomalies for which information is reported, infants born prematurely (less than 37 completed weeks of gestation), who are at very high risk of having a low birthweight, had a greatly elevated rate of anomalies compared with infants born at term. While 11.0 percent of all births in 1993 were preterm, for 13 of the 21 congenital anomalies studied on birth certificates, the risk of a preterm delivery was at least twice as high.

Multiple births

For the first year since these data were collected, the number of live births in multiple deliveries surpassed 100,000, totaling 100,613 births for 1993. The number of live births in twin deliveries increased by 1 percent, and the number of triplet and other higher-order multiple births rose by 7 percent between 1992 and 1993. (See table 47 for 1993 data.) Conversely, the number of singleton births declined by 2 percent. The multiple birth total for 1993 included 96,445 twin, 3,834 triplet, 277 quadruplet, and 57 quintuplet or other higher-order births.

The multiple birth ratio (the number of live births in multiple deliveries per 1,000 total live births) increased for the 13th consecutive year to 25.2 for 1993 from 24.4 for 1992. Following modest, erratic growth during the 1970's (from 18.1 in 1971 to 19.3 in 1980) this figure has risen steadily by about 2 percent a year since 1980. Although higher-order multiple births (triplets, quadruplets, quintuplets, and other higher-order multiple births) comprise an increasing proportion of all multiples (4.1 percent in 1993 compared with 1.6 percent in 1971), the vast majority of multiple births continue to be twins and, thus, the multiple birth ratio is primarily a measure of twin births.

The higher-order multiple birth ratio, which is defined as the number of triplets and other higher-order plural births per 100,000 live births, continued its rapid ascent, increasing by 9 percent, from 95.5 to 104.2 between 1992 and 1993. Driven primarily by the steep rise in higher-order multiple births to white mothers, this ratio has nearly doubled in only 7 years, rising from 56.2 to the current level, and has almost tripled since 1980 (37.0). This growth represents an increase of 200 percent in the number of higher-order multiples between 1980 and 1993 (from 1,337 to 4,168) compared with only a 10-percent increase among singleton births.

The higher-order multiple birth ratio for births to white mothers increased by 11 percent between 1992 and 1993, rising from 107.6 to 119.0 per 100,000 births (figure 6). The latest rise follows an increase of 20 percent from 1991 to 1992. The white higher-order multiple birth ratio has tripled since 1980 (37.6) and quadrupled since 1971 (28.4) (86). Most of the rise has been among mothers 30 years of age and over. Between 1980 and 1993 the higher-order multiple birth ratio for white mothers in their thirties rose sharply, from 59.2 to 226.6. This increase has been associated with the expanded use of fertility-enhancing techniques (ovulation-inducing drugs and assisted reproductive techniques such as in vitro fertilization), services that are primarily

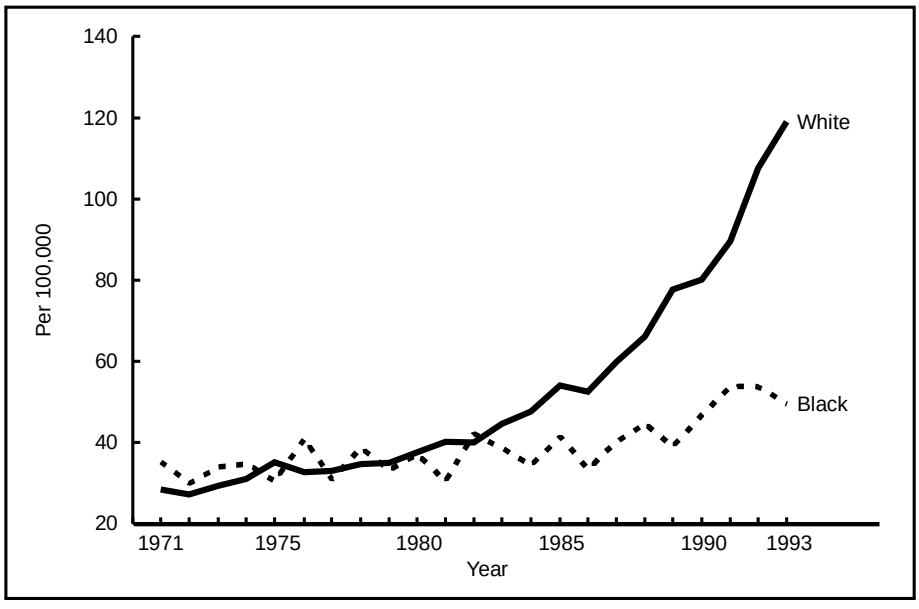


Figure 6. Higher-order multiple birth ratios by race of mother, 1971–93

utilized by white mothers of higher socioeconomic status (94,95). It has been estimated that 63–80 percent of all higher-order multiple births are the result of these procedures (96,99).

The higher-order multiple birth ratio among black mothers declined between 1992 and 1993 from 53.6 to 49.5. Because there are few such births, year-to-year changes in the ratio for black mothers are erratic. The ratio for black mothers has increased much more modestly than for white mothers, rising only 34 percent since 1980, and 40 percent since 1971. The increase in the higher-order multiple birth ratio for black births has been attributed primarily to shifts in the maternal age distribution (97).

The risk to both mother and child in a multiple delivery is substantially greater than in a singleton delivery, and risk tends to rise with increasing plurality. Maternal complications of multiple deliveries include preeclampsia, anemia, and postpartum hemorrhage (98), and a greatly elevated risk of delivery by cesarean section (42). Twin and triplet infants are 9–15 times as likely as singleton infants to be low birthweight and are 5–9 times as likely to be born preterm (data not shown). Multiple births are also 7 times more likely than singleton deliveries not to survive the first 28 days of life (82). Another consequence of births in multiple deliveries is their higher health care costs. A recent study found that the cost of each birth in a twin and triplet delivery was 2–3 times that of a birth in a singleton delivery (96).

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Symbols

- - -	Data not available
. . .	Category not applicable
–	Quantity zero
0.0	Quantity more than zero but less than 0.05
*	Figure does not meet standard of reliability or precision

List of tables

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[1]Includes American Indian and Asian or Pacific Islander.
[2]Non-Hispanic origin only.
[3]Includes American Indian, Chinese, Japanese, Hawaiian, Filipino and other Asian or Pacific Islander.

Table 1. Live births, birth rates, and fertility rates, by race: United States, specified years 1940–55 and each year, 1960–93

[Birth rates are live births per 1,000 population in specified group. Fertility rates per 1,000 women aged 15–44 years in specified group. Population enumerated as of April 1 for census years and estimated as of July 1 for all other years. Beginning with 1970, excludes births to nonresidents of the United States]

Year	Number					Birth rate					Fertility rate				
	All races[1]	White	Black	American Indian[2]	Asian or Pacific Islander	All races[1]	White	Black	American Indian[2]	Asian or Pacific Islander	All races[1]	White	Black	American Indian[2]	Asian or Pacific Islander
Registered births															
Race of mother:															
1993	4,000,240	3,149,833	658,875	38,732	152,800	15.5	14.7	20.5	17.8	17.7	67.6	65.4	80.5	73.4	66.7
1992	4,065,014	3,201,678	673,633	39,453	150,250	15.9	15.0	21.3	18.4	18.0	68.9	66.5	83.2	75.4	67.2
1991	4,110,907	3,241,273	682,602	38,841	145,372	16.3	15.4	21.9	18.3	18.2	69.6	67.0	85.2	75.1	67.6
1990	4,158,212	3,290,273	684,336	39,051	141,635	16.7	15.8	22.4	18.9	19.0	70.9	68.3	86.8	76.2	69.6
1989	4,040,958	3,192,355	673,124	39,478	133,075	16.4	15.4	22.3	19.7	18.7	69.2	66.4	86.2	79.0	68.2
1988	3,909,510	3,102,083	638,562	37,088	129,035	16.0	15.0	21.5	19.3	19.2	67.3	64.5	82.6	76.8	70.2
1987	3,809,394	3,043,828	611,173	35,322	116,560	15.7	14.9	20.8	19.1	18.4	65.8	63.3	80.1	75.6	67.1
1986	3,756,547	3,019,175	592,910	34,169	107,797	15.6	14.8	20.5	19.2	18.0	65.4	63.1	78.9	75.9	66.0
1985	3,760,561	3,037,913	581,824	34,037	104,606	15.8	15.0	20.4	19.8	18.7	66.3	64.1	78.8	78.6	68.4
1984[3]	3,669,141	2,967,100	568,138	33,256	98,926	15.6	14.8	20.1	20.1	18.8	65.5	63.2	78.2	79.8	69.2
1983[3]	3,638,933	2,946,468	562,624	32,881	95,713	15.6	14.8	20.2	20.6	19.5	65.7	63.4	78.7	81.8	71.7
1982[3]	3,680,537	2,984,817	568,506	32,436	93,193	15.9	15.1	20.7	21.1	20.3	67.3	64.8	80.9	83.6	74.8
1981[3]	3,629,238	2,947,679	564,955	29,688	84,553	15.8	15.0	20.8	20.0	20.1	67.3	64.8	82.0	79.6	73.7
1980[3]	3,612,258	2,936,351	568,080	29,389	74,355	15.9	15.1	21.3	20.7	19.9	68.4	65.6	84.7	82.7	73.2
Race of child:															
1980[3]	3,612,258	2,898,732	589,616	36,797	---	15.9	14.9	22.1	---	---	68.4	64.7	88.1	---	---
1979[3]	3,494,398	2,808,420	577,855	34,269	---	15.6	14.5	22.0	---	---	67.2	63.4	88.3	---	---
1978[3]	3,333,279	2,681,116	551,540	33,160	---	15.0	14.0	21.3	---	---	65.5	61.7	86.7	---	---
1977[3]	3,326,632	2,691,070	544,221	30,500	---	15.1	14.1	21.4	---	---	66.8	63.2	88.1	---	---
1976[3]	3,167,788	2,567,614	514,479	29,009	---	14.6	13.6	20.5	---	---	65.0	61.5	85.8	---	---
1975[3]	3,144,198	2,551,996	511,581	27,546	---	14.6	13.6	20.7	---	---	66.0	62.5	87.9	---	---
1974[3]	3,159,958	2,575,792	507,162	26,631	---	14.8	13.9	20.8	---	---	67.8	64.2	89.7	---	---
1973[3]	3,136,965	2,551,030	512,597	26,464	---	14.8	13.8	21.4	---	---	68.8	64.9	93.6	---	---
1972[3]	3,258,411	2,655,558	531,329	27,368	---	15.6	14.5	22.5	---	---	73.1	68.9	99.9	---	---
1971[4]	3,555,970	2,919,746	564,960	27,148	---	17.2	16.1	24.4	---	---	81.6	77.3	109.7	---	---
1970[4]	3,731,386	3,091,264	572,362	25,864	---	18.4	17.4	25.3	---	---	87.9	84.1	115.4	---	---
1969[4]	3,600,206	2,993,614	543,132	24,008	---	17.9	16.9	24.4	---	---	86.1	82.2	112.1	---	---
1968[4]	3,501,564	2,912,224	531,152	24,156	---	17.6	16.6	24.2	---	---	85.2	81.3	112.7	---	---
1967[5]	3,520,959	2,922,502	543,976	22,665	---	17.8	16.8	25.1	---	---	87.2	82.8	118.5	---	---
1966[4]	3,606,274	2,993,230	558,244	23,014	---	18.4	17.4	26.2	---	---	90.8	86.2	124.7	---	---
1965[4]	3,760,358	3,123,860	581,126	24,066	---	19.4	18.3	27.7	---	---	96.3	91.3	133.2	---	---
1964[4]	4,027,490	3,369,160	607,556	24,382	---	21.1	20.0	29.5	---	---	104.7	99.8	142.6	---	---
1963[4,6]	4,098,020	3,326,344	580,658	22,358	---	21.7	20.7	---	---	---	108.3	103.6	---	---	---
1962[4,6]	4,167,362	3,394,068	584,610	21,968	---	22.4	21.4	---	---	---	112.0	107.5	---	---	---
1961[4]	4,268,326	3,600,864	611,072	21,464	---	23.3	22.2	---	---	---	117.1	112.3	---	---	---
1960[4]	4,257,850	3,600,744	602,264	21,114	---	23.7	22.7	31.9	---	---	118.0	113.2	153.5	---	---
Births adjusted for underregistration															
Race of child:															
1955	4,097,000	3,485,000	---	---	---	25.0	23.8	---	---	---	118.3	113.7	---	---	---
1950	3,632,000	3,108,000	---	---	---	24.1	23.0	---	---	---	106.2	102.3	---	---	---
1945	2,858,000	2,471,000	---	---	---	20.4	19.7	---	---	---	85.9	83.4	---	---	---
1940	2,559,000	2,199,000	---	---	---	19.4	18.6	---	---	---	79.9	77.1	---	---	---

[1]For 1960–91 includes births to races not shown separately.
[2]Includes births to Aleuts and Eskimos.
[3]Based on 100 percent of births in selected States and on a 50-percent sample of births in all other States; see Technical notes.
[4]Based on a 50-percent sample of births.
[5]Based on a 20- to 50-percent sample of births.
[6]Figures by race exclude data for New Jersey.

Table 2. Live births by age of mother, live-birth order, and race of mother: United States, 1993

[Live-birth order refers to number of children born alive to mother]

Live-birth order and race of mother	All ages	Age of mother												
		Under 15 years	15–19 years						20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years
			Total	15 years	16 years	17 years	18 years	19 years						
All races	4,000,240	12,554	501,093	30,074	61,960	98,501	138,313	172,245	1,038,127	1,128,862	901,151	357,053	59,071	2,329
First child	1,619,840	12,100	379,543	28,056	54,892	80,211	102,163	114,221	486,093	413,142	240,602	76,129	11,806	425
Second child	1,289,326	363	96,219	1,784	6,198	15,553	29,049	43,635	345,612	396,329	323,598	111,764	15,065	376
Third child	645,596	24	19,513	82	567	2,111	5,597	11,156	140,247	197,099	193,567	82,795	11,939	412
Fourth child	253,619	5	3,282	12	36	207	852	2,175	44,653	74,268	81,092	42,431	7,600	288
Fifth child	96,154	–	450	1	9	19	86	335	12,924	26,456	31,913	19,763	4,430	218
Sixth child	40,647	–	58	–	–	4	9	45	3,425	10,296	14,055	9,973	2,697	143
Seventh child	18,442	–	16	–	–	3	6	7	878	3,928	6,443	5,367	1,689	121
Eighth child and over	18,545	–	7	–	–	–	1	6	306	2,238	5,442	6,814	3,410	328
Not stated	18,071	62	2,005	139	258	393	550	665	3,989	5,106	4,439	2,017	435	18
White	3,149,833	5,755	341,817	16,656	38,721	65,932	96,747	123,761	790,154	920,772	749,446	292,693	47,386	1,810
First child	1,294,431	5,559	270,357	15,815	35,432	56,279	75,611	87,220	390,926	348,945	203,746	64,546	10,001	351
Second child	1,038,865	144	59,470	727	2,911	8,500	17,917	29,415	267,272	331,277	274,824	93,178	12,376	324
Third child	503,392	14	9,381	29	212	811	2,536	5,793	96,211	157,256	162,362	68,258	9,599	311
Fourth child	186,085	3	1,139	4	11	66	282	776	25,421	54,404	64,872	34,044	5,962	240
Fifth child	65,184	–	109	–	3	8	21	77	5,808	16,842	23,614	15,270	3,370	171
Sixth child	25,776	–	27	–	–	3	8	16	1,213	5,493	9,539	7,396	2,010	98
Seventh child	11,209	–	7	–	–	2	2	3	299	1,787	4,015	3,779	1,238	84
Eighth child and over	11,033	–	4	–	–	–	–	4	110	778	2,880	4,573	2,473	215
Not stated	13,858	35	1,323	81	152	263	370	457	2,894	3,990	3,594	1,649	357	16
Black	658,875	6,417	143,153	12,389	21,319	29,448	37,221	42,776	208,149	151,566	100,966	41,348	7,029	247
First child	245,658	6,185	97,314	11,294	17,767	21,502	23,455	23,296	75,454	39,317	20,190	6,220	940	38
Second child	190,344	195	33,489	984	3,082	6,470	10,169	12,784	66,628	47,611	30,166	10,768	1,457	30
Third child	115,261	8	9,385	49	339	1,219	2,839	4,939	38,895	32,514	23,194	9,756	1,454	55
Fourth child	55,998	2	1,991	7	24	133	527	1,300	17,256	16,542	12,850	6,208	1,120	29
Fifth child	25,439	–	306	–	5	9	59	233	6,346	7,899	6,634	3,478	752	24
Sixth child	11,930	–	27	–	–	–	1	26	1,973	3,936	3,557	1,945	472	20
Seventh child	5,612	–	9	–	–	1	4	4	495	1,743	1,874	1,191	285	15
Eighth child and over	5,315	–	3	–	–	–	1	2	165	1,177	1,912	1,527	497	34
Not stated	3,318	27	629	55	102	114	166	192	937	827	589	255	52	2
American Indian[1]	38,732	157	7,714	522	985	1,580	2,070	2,557	12,608	9,472	5,910	2,409	447	15
First child	13,154	152	5,634	496	874	1,222	1,441	1,601	4,518	1,837	755	215	42	1
Second child	10,243	5	1,675	25	103	318	524	705	4,249	2,572	1,284	403	55	–
Third child	6,847	–	337	–	8	30	94	205	2,420	2,209	1,318	489	71	3
Fourth child	4,041	–	41	1	–	1	7	32	951	1,490	1,034	451	71	3
Fifth child	2,192	–	10	–	–	1	1	8	330	764	683	344	57	4
Sixth child	1,122	–	–	–	–	–	–	–	84	359	425	204	49	1
Seventh child	549	–	–	–	–	–	–	–	15	133	231	125	43	2
Eighth child and over	461	–	–	–	–	–	–	–	11	75	155	161	58	1
Not stated	123	–	17	–	–	8	3	6	30	33	25	17	1	–
Asian or Pacific Islander	152,800	225	8,409	507	935	1,541	2,275	3,151	27,216	47,052	44,829	20,603	4,209	257
First child	66,597	204	6,238	451	819	1,208	1,656	2,104	15,195	23,043	15,911	5,148	823	35
Second child	49,874	19	1,585	48	102	265	439	731	7,463	14,869	17,324	7,415	1,177	22
Third child	20,096	2	410	4	8	51	128	219	2,721	5,120	6,693	4,292	815	43
Fourth child	7,495	–	111	–	1	7	36	67	1,025	1,832	2,336	1,728	447	16
Fifth child	3,339	–	25	1	1	1	5	17	440	951	982	671	251	19
Sixth child	1,819	–	4	–	–	1	–	3	155	508	534	428	166	24
Seventh child	1,072	–	–	–	–	–	–	–	69	265	323	272	123	20
Eighth child and over	1,736	–	–	–	–	–	–	–	20	208	495	553	382	78
Not stated	772	–	36	3	4	8	11	10	128	256	231	96	25	–

[1]Includes births to Aleuts and Eskimos.

Table 3. Birth rates by age of mother, live-birth order, and race of mother: United States, 1993

[Rates are live births per 1,000 women in specified age and racial group. Live-birth order refers to number of children born alive to mother]

Live-birth order and race of mother	Age of mother										
			15–19 years								
	15–44 years[1]	10–14 years	Total	15–17 years	18–19 years	20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years
All races	67.6	1.4	59.6	37.8	92.1	112.6	115.5	80.8	32.9	6.1	0.3
First child	27.5	1.3	45.3	32.5	64.4	52.9	42.5	21.7	7.1	1.2	0.1
Second child	21.9	0.0	11.5	4.7	21.6	37.6	40.7	29.1	10.4	1.6	0.0
Third child	11.0	0.0	2.3	0.6	5.0	15.3	20.3	17.4	7.7	1.2	0.1
Fourth child	4.3	*	0.4	0.1	0.9	4.9	7.6	7.3	3.9	0.8	0.0
Fifth child	1.6	*	0.1	0.0	0.1	1.4	2.7	2.9	1.8	0.5	0.0
Sixth and seventh child	1.0	*	0.0	*	0.0	0.5	1.5	1.8	1.4	0.5	0.0
Eighth child and over	0.3	*	*	*	*	0.0	0.2	0.5	0.6	0.4	0.0
White	65.4	0.8	51.1	30.3	82.1	106.9	116.6	82.1	32.7	5.9	0.3
First child	27.0	0.8	40.6	27.0	60.9	53.1	44.4	22.4	7.3	1.2	0.1
Second child	21.7	0.0	8.9	3.0	17.7	36.3	42.1	30.2	10.5	1.5	0.0
Third child	10.5	*	1.4	0.3	3.1	13.1	20.0	17.9	7.7	1.2	0.0
Fourth child	3.9	*	0.2	0.0	0.4	3.5	6.9	7.1	3.8	0.7	0.0
Fifth child	1.4	*	0.0	*	0.0	0.8	2.1	2.6	1.7	0.4	0.0
Sixth and seventh child	0.8	*	0.0	*	0.0	0.2	0.9	1.5	1.3	0.4	0.0
Eighth child and over	0.2	*	*	*	*	0.0	0.1	0.3	0.5	0.3	0.0
Black	80.5	4.6	108.6	79.8	151.9	152.6	108.4	67.3	29.2	5.9	0.3
First child	30.2	4.4	74.2	64.2	89.2	55.6	28.3	13.5	4.4	0.8	0.0
Second child	23.4	0.1	25.5	13.4	43.8	49.1	34.2	20.2	7.7	1.2	0.0
Third child	14.1	*	7.2	2.0	14.8	28.6	23.4	15.6	6.9	1.2	0.1
Fourth child	6.9	*	1.5	0.2	3.5	12.7	11.9	8.6	4.4	0.9	0.0
Fifth child	3.1	*	0.2	*	0.6	4.7	5.7	4.4	2.5	0.6	0.0
Sixth and seventh child	2.2	*	0.0	*	0.1	1.8	4.1	3.6	2.2	0.6	0.0
Eighth child and over	0.7	*	*	*	*	0.1	0.8	1.3	1.1	0.4	0.0
American Indian[2]	73.4	1.4	83.1	53.7	130.7	139.8	107.6	62.8	27.6	5.9	*
First child	25.0	1.4	60.8	45.2	86.1	50.2	20.9	8.1	2.5	0.6	*
Second child	19.5	*	18.1	7.8	34.8	47.2	29.3	13.7	4.6	0.7	*
Third child	13.0	*	3.6	0.7	8.5	26.9	25.2	14.1	5.6	0.9	*
Fourth child	7.7	*	0.4	*	1.1	10.6	17.0	11.0	5.2	0.9	*
Fifth child	4.2	*	*	*	*	3.7	8.7	7.3	4.0	0.8	*
Sixth and seventh child	3.2	*	*	*	*	1.1	5.6	7.0	3.8	1.2	*
Eighth child and over	0.9	*	*	*	*	*	0.9	1.7	1.9	0.8	*
Asian or Pacific Islander	66.7	0.6	27.0	16.0	43.3	73.3	119.9	103.9	50.2	11.3	0.9
First child	29.2	0.6	20.1	13.4	30.1	41.1	59.0	37.1	12.6	2.2	0.1
Second child	21.9	*	5.1	2.2	9.4	20.2	38.1	40.3	18.2	3.2	0.1
Third child	8.8	*	1.3	0.3	2.8	7.4	13.1	15.6	10.5	2.2	0.2
Fourth child	3.3	*	0.4	*	0.8	2.8	4.7	5.4	4.2	1.2	*
Fifth child	1.5	*	0.1	*	0.2	1.2	2.4	2.3	1.6	0.7	*
Sixth and seventh child	1.3	*	*	*	*	0.6	2.0	2.0	1.7	0.8	0.2
Eighth child and over	0.8	*	*	*	*	0.1	0.5	1.2	1.4	1.0	0.3

[1]Rates computed by relating total births, regardless of age of mother, to women aged 15–44 years.
[2]Includes births to Aleuts and Eskimos.

Table 4. Total fertility rates and birth rates by age of mother and race: United States, 1970–93

[Total fertility rates are sums of birth rates for 5-year age groups multiplied by 5. Birth rates are live births per 1,000 women in specified group enumerated as of April 1 for 1970, 1980, and 1990, and estimated as of July 1 for all other years]

Year and race	Total fertility rate	Age of mother										
		10–14 years	15–19 years			20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years
			Total	15–17 years	18–19 years						
All races[1]												
1993	2,046.0	1.4	59.6	37.8	92.1	112.6	115.5	80.8	32.9	6.1	0.3
1992	2,065.0	1.4	60.7	37.8	94.5	114.6	117.4	80.2	32.5	5.9	0.3
1991	2,073.0	1.4	62.1	38.7	94.4	115.7	118.2	79.5	32.0	5.5	0.2
1990	2,081.0	1.4	59.9	37.5	88.6	116.5	120.2	80.8	31.7	5.5	0.2
1989	2,014.0	1.4	57.3	36.4	84.2	113.8	117.6	77.4	29.9	5.2	0.2
1988	1,934.0	1.3	53.0	33.6	79.9	110.2	114.4	74.8	28.1	4.8	0.2
1987	1,872.0	1.3	50.6	31.7	78.5	107.9	111.6	72.1	26.3	4.4	0.2
1986	1,837.5	1.3	50.2	30.5	79.6	107.4	109.8	70.1	24.4	4.1	0.2
1985	1,844.0	1.2	51.0	31.0	79.6	108.3	111.0	69.1	24.0	4.0	0.2
1984[2]	1,806.5	1.2	50.6	31.0	77.4	106.8	108.7	67.0	22.9	3.9	0.2
1983[2]	1,799.0	1.1	51.4	31.8	77.4	107.8	108.5	64.9	22.0	3.9	0.2
1982[2]	1,827.5	1.1	52.4	32.3	79.4	111.6	111.0	64.1	21.2	3.9	0.2
1981[2]	1,812.0	1.1	52.2	32.0	80.0	112.2	111.5	61.4	20.0	3.8	0.2
1980[2]	1,839.5	1.1	53.0	32.5	82.1	115.1	112.9	61.9	19.8	3.9	0.2
1979[2]	1,808.0	1.2	52.3	32.3	81.3	112.8	111.4	60.3	19.5	3.9	0.2
1978[2]	1,760.0	1.2	51.5	32.2	79.8	109.9	108.5	57.8	19.0	3.9	0.2
1977[2]	1,789.5	1.2	52.8	33.9	80.9	112.9	111.0	56.4	19.2	4.2	0.2
1976[2]	1,738.0	1.2	52.8	34.1	80.5	110.3	106.2	53.6	19.0	4.3	0.2
1975[2]	1,774.0	1.3	55.6	36.1	85.0	113.0	108.2	52.3	19.5	4.6	0.3
1974[2]	1,835.0	1.2	57.5	37.3	88.7	117.7	111.5	53.8	20.2	4.8	0.3
1973[2]	1,879.0	1.2	59.3	38.5	91.2	119.7	112.2	55.6	22.1	5.4	0.3
1972[2]	2,010.0	1.2	61.7	39.0	96.9	130.2	117.7	59.8	24.8	6.2	0.4
1971[3]	2,266.5	1.1	64.5	38.2	105.3	150.1	134.1	67.3	28.7	7.1	0.4
1970[3]	2,480.0	1.2	68.3	38.8	114.7	167.8	145.1	73.3	31.7	8.1	0.5
White											
Race of mother:											
1993	1,982.0	0.8	51.1	30.3	82.1	106.9	116.6	82.1	32.7	5.9	0.3
1992	1,993.5	0.8	51.8	30.1	83.8	108.2	118.4	81.4	32.2	5.7	0.2
1991	1,995.5	0.8	52.8	30.7	83.5	109.0	118.8	80.5	31.8	5.2	0.2
1990	2,003.0	0.7	50.8	29.5	78.0	109.8	120.7	81.7	31.5	5.2	0.2
1989	1,931.0	0.7	47.9	28.1	72.9	106.9	117.8	78.1	29.7	4.9	0.2
1988	1,856.5	0.6	44.4	26.0	69.6	103.7	114.8	75.4	27.7	4.5	0.2
1987	1,804.5	0.6	42.5	24.6	68.9	102.3	112.3	73.0	25.9	4.1	0.2
1986	1,776.0	0.6	42.3	23.8	70.1	102.7	110.8	70.9	23.9	3.8	0.2
1985	1,787.0	0.6	43.3	24.4	70.4	104.1	112.3	69.9	23.3	3.7	0.2
1984[2]	1,748.5	0.6	42.9	24.3	68.4	102.7	109.8	67.7	22.2	3.6	0.2
1983[2]	1,740.5	0.6	43.9	25.0	68.8	103.8	109.4	65.3	21.3	3.6	0.2
1982[2]	1,767.0	0.6	45.0	25.5	70.8	107.7	111.9	64.0	20.4	3.6	0.2
1981[2]	1,748.0	0.5	44.9	25.4	71.5	108.3	112.3	61.0	19.0	3.4	0.2
1980[2]	1,773.0	0.6	45.4	25.5	73.2	111.1	113.8	61.2	18.8	3.5	0.2

See footnotes at end of table.

Table 4. Total fertility rates and birth rates by age of mother and race: United States, 1970–93—Con.

[Total fertility rates are sums of birth rates for 5-year age groups multiplied by 5. Birth rates are live births per 1,000 women in specified group enumerated as of April 1 for 1970, 1980, and 1990, and estimated as of July 1 for all other years]

Year and race	Total fertility rate	Age of mother										
		10–14 years	15–19 years			20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years
			Total	15–17 years	18–19 years						
White—Con.											
Race of child:											
1980[2]	1,748.5	0.6	44.7	25.2	72.1	109.5	112.4	60.4	18.5	3.4	0.2
1979[2]	1,715.5	0.6	43.7	24.7	71.0	107.0	110.8	59.0	18.3	3.5	0.2
1978[2]	1,667.5	0.6	42.9	24.9	69.4	104.1	107.9	56.6	17.7	3.5	0.2
1977[2]	1,703.0	0.6	44.1	26.1	70.5	107.7	110.9	55.3	18.0	3.8	0.2
1976[2]	1,652.0	0.6	44.1	26.3	70.2	105.3	105.9	52.6	17.8	3.9	0.2
1975[2]	1,686.0	0.6	46.4	28.0	74.0	108.2	108.1	51.3	18.2	4.2	0.2
1974[2]	1,748.5	0.6	47.9	28.7	77.3	113.0	111.8	52.9	18.9	4.4	0.2
1973[2]	1,783.0	0.6	49.0	29.2	79.3	114.4	112.3	54.4	20.7	4.9	0.3
1972[2]	1,906.5	0.5	51.0	29.3	84.3	124.8	117.4	58.4	23.3	5.6	0.3
1971[3]	2,160.5	0.5	53.6	28.5	92.3	144.9	134.0	65.4	26.9	6.4	0.4
1970[3]	2,385.0	0.5	57.4	29.2	101.5	163.4	145.9	71.9	30.0	7.5	0.4
Black											
Race of mother:											
1993	2,384.5	4.6	108.6	79.8	151.9	152.6	108.4	67.3	29.2	5.9	0.3
1992	2,442.0	4.7	112.4	81.3	157.9	158.0	111.2	67.5	28.8	5.6	0.2
1991	2,480.0	4.8	115.5	84.1	158.6	160.9	113.1	67.7	28.3	5.5	0.2
1990	2,480.0	4.9	112.8	82.3	152.9	160.2	115.5	68.7	28.1	5.5	0.3
1989	2,432.5	5.1	111.5	81.9	151.9	156.8	114.4	66.3	26.7	5.4	0.3
1988	2,298.0	4.9	102.7	75.7	142.7	149.7	108.2	63.1	25.6	5.1	0.3
1987	2,198.0	4.8	97.6	72.1	135.8	142.7	104.3	60.6	24.6	4.8	0.2
1986	2,135.5	4.7	95.8	69.3	135.1	137.3	101.1	59.3	23.8	4.8	0.3
1985	2,109.0	4.5	95.4	69.3	132.4	135.0	100.2	57.9	23.9	4.6	0.3
1984[2]	2,070.5	4.4	94.1	69.2	128.1	132.2	98.4	56.7	23.3	4.8	0.2
1983[2]	2,066.0	4.1	93.9	69.6	127.1	131.9	98.4	56.2	23.3	5.1	0.3
1982[2]	2,106.5	4.0	94.3	69.7	128.9	135.4	101.3	57.5	23.3	5.1	0.4
1981[2]	2,117.5	4.0	94.5	69.3	131.0	136.5	102.3	57.4	23.1	5.4	0.3
1980[2]	2,176.5	4.3	97.8	72.5	135.1	140.0	103.9	59.9	23.5	5.6	0.3
Race of child:											
1980[2]	2,266.0	4.3	100.0	73.6	138.8	146.3	109.1	62.9	24.5	5.8	0.3
1979[2]	2,263.2	4.6	101.7	75.7	140.4	146.3	108.2	60.7	24.7	6.1	0.4
1978[2]	2,218.0	4.4	100.9	75.0	139.7	143.8	105.4	58.3	24.3	6.1	0.4
1977[2]	2,251.0	4.7	104.7	79.6	142.9	144.4	106.4	57.5	25.4	6.6	0.5
1976[2]	2,187.0	4.7	104.9	80.3	142.5	140.5	101.6	53.6	24.8	6.8	0.5
1975[2]	2,243.0	5.1	111.8	85.6	152.4	142.8	102.2	53.1	25.6	7.5	0.5
1974[2]	2,298.5	5.0	116.5	90.0	158.7	146.7	102.2	54.1	27.0	7.6	0.6
1973[2]	2,411.0	5.4	123.1	96.0	166.6	153.1	103.9	58.1	29.4	8.6	0.6
1972[2]	2,601.0	5.1	129.8	99.5	179.5	165.0	112.4	64.0	33.4	9.8	0.7
1971[3]	2,902.0	5.1	134.5	99.4	192.6	186.6	128.0	74.8	38.9	11.6	0.9
1970[3]	3,099.5	5.2	140.7	101.4	204.9	202.7	136.3	79.6	41.9	12.5	1.0

See footnotes at end of table.

Table 4. Total fertility rates and birth rates by age of mother and race: United States, 1970–93—Con.

[Total fertility rates are sums of birth rates for 5-year age groups multiplied by 5. Birth rates are live births per 1,000 women in specified group enumerated as of April 1 for 1970, 1980, and 1990, and estimated as of July 1 for all other years]

Year and race	Total fertility rate	Age of mother									
		10–14 years	15–19 years			20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years
			Total	15–17 years	18–19 years						
American Indian[4]											
Race of mother:											
1993	2,141.0	1.4	83.1	53.7	130.7	139.8	107.6	62.8	27.6	5.9	*
1992	2,190.0	1.6	84.4	53.8	132.6	145.5	109.4	63.0	28.0	6.1	*
1991	2,169.0	1.6	85.0	52.7	134.3	144.9	106.9	61.9	27.2	5.9	0.4
1990	2,183.0	1.6	81.1	48.5	129.3	148.7	110.3	61.5	27.5	5.9	*
1989	2,247.0	1.5	82.7	51.6	128.9	152.4	114.2	64.8	27.4	6.4	*
1988	2,153.5	1.7	77.5	49.7	121.1	145.2	110.9	64.5	25.6	5.3	*
1987	2,099.0	1.7	77.2	48.8	122.2	140.0	107.9	63.0	24.4	5.6	*
1986	2,082.0	1.8	78.1	48.7	125.3	138.8	107.9	60.7	23.8	5.3	*
1985	2,128.0	1.7	79.2	47.7	124.1	139.1	109.6	62.6	27.4	6.0	*
1984[2]	2,136.0	1.7	81.5	50.7	124.7	142.4	109.2	60.5	26.3	5.6	*
1983[2]	2,180.5	1.9	84.2	55.2	121.4	145.5	113.7	58.9	25.5	6.4	*
1982[2]	2,213.0	1.4	83.5	52.6	127.6	148.1	115.8	60.9	26.9	6.0	*
1981[2]	2,090.0	2.1	78.4	49.7	121.5	141.2	105.6	58.9	25.2	6.6	*
1980[2]	2,162.5	1.9	82.2	51.5	129.5	143.7	106.6	61.8	28.1	8.2	*
Asian or Pacific Islander											
Race of mother:											
1993	1,935.5	0.6	27.0	16.0	43.3	73.3	119.9	103.9	50.2	11.3	0.9
1992	1,942.0	0.7	26.6	15.2	43.1	74.6	121.0	103.0	50.6	11.0	0.9
1991	1,956.0	0.8	27.4	16.1	43.1	75.2	123.2	103.3	49.0	11.2	1.1
1990	2,002.5	0.7	26.4	16.0	40.2	79.2	126.3	106.5	49.6	10.7	1.1
1989	1,947.5	0.6	25.6	15.0	40.4	78.8	124.0	102.3	47.0	10.2	1.0
1988	1,983.5	0.6	24.2	13.6	39.6	80.7	128.0	104.4	47.5	10.3	1.0
1987	1,886.0	0.6	22.4	12.6	37.0	79.7	122.7	97.0	44.2	9.5	1.1
1986	1,836.0	0.5	22.8	12.1	38.8	79.2	119.9	92.6	41.9	9.3	1.0
1985	1,885.0	0.4	23.8	12.5	40.8	83.6	123.0	93.6	42.7	8.7	1.2
1984[2]	1,892.0	0.5	24.2	12.6	40.7	86.7	124.3	92.4	40.6	8.7	1.0
1983[2]	1,943.5	0.5	26.1	12.9	44.5	94.0	126.2	93.3	39.4	8.2	1.0
1982[2]	2,015.5	0.4	29.4	14.0	50.8	98.9	130.9	94.4	39.2	8.8	1.1
1981[2]	1,976.0	0.3	28.5	13.4	49.5	96.4	129.1	93.4	38.0	8.6	0.9
1980[2]	1,953.5	0.3	26.2	12.0	46.2	93.3	127.4	96.0	38.3	8.5	0.7

[1]For 1970–91 includes births to races not shown separately.
[2]Based on 100 percent of births in selected States and on a 50-percent sample of births in all other States; see Technical notes.
[3]Based on a 50-percent sample of births.
[4]Includes births to Aleuts and Eskimos.

Table 5. Birth rates by live-birth order and race of mother: United States, 1980–93

[Rates are live births per 1,000 women aged 15–44 years, enumerated as of April 1 for 1980 and 1990, and estimated as of July 1 for all other years. Live-birth order refers to number of children born alive to mother. Figures for live-birth order not stated are distributed]

Year and race of mother	Total	Live-birth order						
		1	2	3	4	5	6 and 7	8 and over
All races[1]								
1993	67.6	27.5	21.9	11.0	4.3	1.6	1.0	0.3
1992	68.9	27.8	22.3	11.3	4.4	1.7	1.0	0.3
1991	69.6	28.3	22.4	11.4	4.5	1.7	1.0	0.3
1990	70.9	29.0	22.8	11.7	4.5	1.7	1.0	0.3
1989	69.2	28.4	22.4	11.3	4.3	1.6	0.9	0.3
1988	67.3	27.6	22.0	10.9	4.1	1.5	0.9	0.3
1987	65.8	27.2	21.6	10.5	3.9	1.4	0.8	0.3
1986	65.4	27.2	21.6	10.3	3.8	1.4	0.8	0.3
1985	66.3	27.6	22.0	10.4	3.8	1.4	0.8	0.3
1984[2]	65.5	27.4	21.7	10.1	3.7	1.4	0.9	0.3
1983[2]	65.7	27.8	21.5	10.1	3.7	1.4	0.9	0.3
1982[2]	67.3	28.6	22.0	10.2	3.8	1.4	0.9	0.3
1981[2]	67.3	29.0	21.6	10.1	3.8	1.5	0.9	0.4
1980[2]	68.4	29.5	21.8	10.3	3.9	1.5	1.0	0.4
White								
1993	65.4	27.0	21.7	10.5	3.9	1.4	0.8	0.2
1992	66.5	27.3	22.0	10.8	4.0	1.4	0.8	0.2
1991	67.0	27.8	22.0	10.8	4.0	1.4	0.8	0.2
1990	68.3	28.4	22.4	11.1	4.0	1.4	0.8	0.2
1989	66.4	27.6	21.9	10.7	3.8	1.3	0.7	0.2
1988	64.5	26.8	21.6	10.4	3.6	1.2	0.7	0.2
1987	63.3	26.5	21.3	10.0	3.5	1.2	0.7	0.2
1986	63.1	26.6	21.3	9.8	3.4	1.2	0.7	0.2
1985	64.1	27.0	21.8	9.9	3.4	1.2	0.7	0.2
1984[2]	63.2	26.8	21.4	9.6	3.3	1.2	0.7	0.2
1983[2]	63.4	27.2	21.2	9.5	3.3	1.2	0.7	0.2
1982[2]	64.8	28.0	21.6	9.6	3.4	1.2	0.7	0.3
1981[2]	64.8	28.4	21.1	9.5	3.4	1.2	0.8	0.3
1980[2]	65.6	28.8	21.3	9.6	3.4	1.3	0.8	0.3
Black								
1993	80.5	30.2	23.4	14.1	6.9	3.1	2.2	0.7
1992	83.2	30.6	24.3	15.0	7.2	3.3	2.2	0.6
1991	85.2	31.5	25.0	15.4	7.4	3.3	2.1	0.6
1990	86.8	32.4	25.6	15.6	7.4	3.2	2.0	0.6
1989	86.2	32.9	25.4	15.3	7.1	3.0	1.9	0.6
1988	82.6	31.8	24.6	14.4	6.6	2.8	1.8	0.5
1987	80.1	31.2	23.8	13.9	6.3	2.7	1.7	0.5
1986	78.9	31.0	23.4	13.5	6.1	2.6	1.7	0.5
1985	78.8	31.0	23.4	13.4	6.1	2.6	1.7	0.5
1984[2]	78.1	30.9	23.0	13.2	6.0	2.6	1.7	0.6
1983[2]	78.7	31.1	23.1	13.2	6.1	2.7	1.8	0.6
1982[2]	80.9	31.7	23.9	13.8	6.3	2.7	1.8	0.7
1981[2]	82.0	32.3	24.2	13.7	6.3	2.8	1.9	0.8
1980[2]	84.9	33.7	24.7	14.0	6.5	2.9	2.1	0.9

[1]Includes races other than white and black.

[2]Based on 100 percent of births in selected States and on a 50-percent sample of births in all other States: see Technical notes.

Table 6. Live births by age of mother, live-birth order, Hispanic origin of mother, and by race of mother for mothers of non-Hispanic origin: United States, 1993

[Live-birth order refers to number of children born alive to mother. Includes births with stated origin of mother only]

Live-birth order and origin of mother	All ages	Age of mother												
		Under 15 years	15–19 years						20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years
			Total	15 years	16 years	17 years	18 years	19 years						
Hispanic														
Total	654,418	2,950	110,695	7,142	14,786	22,507	30,052	36,208	204,875	176,057	108,531	42,788	8,162	360
First child	247,886	2,829	82,219	6,629	13,005	18,010	21,441	23,134	89,507	47,104	19,528	5,735	937	27
Second child	191,602	97	22,887	449	1,571	3,865	7,032	9,970	69,955	58,365	29,890	9,051	1,329	28
Third child	115,471	9	4,361	20	135	474	1,268	2,464	30,947	40,625	27,858	10,059	1,565	47
Fourth child	54,551	2	637	3	5	44	164	421	10,063	18,342	16,556	7,584	1,308	59
Fifth child	23,449	–	68	–	2	6	15	45	2,688	7,050	7,905	4,647	1,036	55
Sixth child	10,164	–	19	–	–	1	6	12	650	2,537	3,587	2,639	698	34
Seventh child	4,533	–	4	–	–	1	1	2	183	878	1,624	1,341	469	34
Eighth child and over	4,048	–	2	–	–	–	–	2	59	431	1,159	1,545	777	75
Not stated	2,714	13	498	41	68	106	125	158	823	725	424	187	43	1
Mexican	443,733	2,008	78,587	4,947	10,212	15,973	21,396	26,059	146,264	117,489	67,721	26,315	5,106	243
First child	164,833	1,918	58,525	4,605	9,018	12,809	15,342	16,751	63,133	28,203	9,954	2,643	441	16
Second child	127,394	71	16,390	310	1,078	2,756	5,023	7,223	50,872	38,389	16,491	4,512	658	11
Third child	79,090	5	2,990	13	84	322	857	1,714	22,253	28,812	18,157	5,986	864	23
Fourth child	39,485	2	419	2	5	27	112	273	7,187	13,628	12,035	5,302	871	41
Fifth child	17,515	–	39	–	2	6	11	20	1,877	5,308	6,039	3,496	722	34
Sixth child	7,706	–	12	–	–	1	5	6	443	1,931	2,789	1,995	514	22
Seventh child	3,499	–	3	–	–	–	1	2	123	652	1,261	1,052	379	29
Eighth child and over	3,209	–	1	–	–	–	–	1	36	311	881	1,268	646	66
Not stated	1,002	12	208	17	25	52	45	69	340	255	114	61	11	1
Puerto Rican	58,102	405	12,566	977	1,885	2,662	3,399	3,643	18,532	14,388	8,460	3,121	595	35
First child	22,827	393	8,861	880	1,599	2,021	2,276	2,085	7,158	4,019	1,734	557	102	3
Second child	16,895	10	2,747	70	225	518	863	1,071	6,000	4,545	2,647	803	141	2
Third child	9,950	1	655	7	36	81	191	340	3,297	3,124	2,015	727	125	6
Fourth child	4,399	–	116	1	–	8	25	82	1,276	1,449	1,030	433	86	9
Fifth child	1,885	–	15	–	–	–	1	14	412	647	475	272	57	7
Sixth child	775	–	2	–	–	–	–	2	112	237	226	153	43	2
Seventh child	345	–	–	–	–	–	–	–	32	113	120	64	14	2
Eighth child and over	282	–	1	–	–	–	–	1	11	59	109	76	22	4
Not stated	744	1	169	19	25	34	43	48	234	195	104	36	5	–
Cuban	11,916	16	790	35	104	139	210	302	2,219	3,935	3,565	1,198	190	3
First child	5,011	16	636	34	95	113	174	220	1,320	1,697	1,038	268	35	1
Second child	4,313	–	128	1	8	20	34	65	679	1,520	1,461	461	64	–
Third child	1,813	–	20	–	–	4	1	15	179	521	748	296	47	2
Fourth child	521	–	2	–	–	1	–	1	30	140	218	109	22	–
Fifth child	151	–	1	–	–	–	1	–	8	35	58	36	13	–
Sixth child	49	–	–	–	–	–	–	–	1	11	15	18	4	–
Seventh child	18	–	–	–	–	–	–	–	–	6	7	4	1	–
Eighth child and over	13	–	–	–	–	–	–	–	–	2	4	5	2	–
Not stated	27	–	3	–	1	1	–	1	2	3	16	1	2	–

See footnotes at end of table.

Table 6. Live births by age of mother, live-birth order, Hispanic origin of mother, and by race of mother for mothers of non-Hispanic origin: United States, 1993—Con.

[Live-birth order refers to number of children born alive to mother. Includes births with stated origin of mother only]

Live-birth order and origin of mother	All ages	Age of mother												
		Under 15 years	15–19 years						20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years
			Total	15 years	16 years	17 years	18 years	19 years						
Central and South American	92,371	217	8,924	500	1,077	1,695	2,449	3,203	23,350	28,182	20,800	9,083	1,757	58
First child	35,505	206	6,890	468	966	1,421	1,824	2,211	11,845	9,578	5,032	1,674	274	6
Second child	28,288	9	1,644	31	101	228	516	768	7,465	9,787	6,636	2,394	342	11
Third child	16,560	2	300	–	6	32	88	174	2,909	5,553	5,024	2,316	443	13
Fourth child	6,854	–	31	–	–	4	7	20	766	2,108	2,382	1,314	249	4
Fifth child	2,616	–	7	–	–	–	–	7	164	659	935	644	195	12
Sixth child	1,124	–	2	–	–	–	–	2	35	214	395	365	106	7
Seventh child	445	–	1	–	–	1	–	–	5	59	156	164	59	1
Eighth child and over	349	–	–	–	–	–	–	–	7	31	93	144	70	4
Not stated	630	–	49	1	4	9	14	21	154	193	147	68	19	–
Other and unknown Hispanic	48,296	304	9,828	683	1,508	2,038	2,598	3,001	14,510	12,063	7,985	3,071	514	21
First child	19,710	296	7,307	642	1,327	1,646	1,825	1,867	6,051	3,607	1,770	593	85	1
Second child	14,712	7	1,978	37	159	343	596	843	4,939	4,124	2,655	881	124	4
Third child	8,058	1	396	–	9	35	131	221	2,309	2,615	1,914	734	86	3
Fourth child	3,292	–	69	–	–	4	20	45	804	1,017	891	426	80	5
Fifth child	1,282	–	6	–	–	–	2	4	227	401	398	199	49	2
Sixth child	510	–	3	–	–	–	1	2	59	144	162	108	31	3
Seventh child	226	–	–	–	–	–	–	–	23	48	80	57	16	2
Eighth child and over	195	–	–	–	–	–	–	–	5	28	72	52	37	1
Not stated	311	–	69	4	13	10	23	19	93	79	43	21	6	–
Non-Hispanic														
Total[1]	3,295,345	9,499	386,017	22,676	46,647	75,181	107,063	134,450	822,431	938,993	779,080	307,783	49,646	1,896
First child	1,351,743	9,178	294,047	21,204	41,437	61,534	79,856	90,016	391,439	360,504	216,869	68,773	10,550	383
Second child	1,082,597	264	72,576	1,320	4,580	11,586	21,780	33,310	272,382	333,727	289,149	100,724	13,440	335
Third child	523,017	15	15,020	61	429	1,628	4,292	8,610	107,953	154,537	163,477	71,493	10,165	357
Fourth child	196,159	3	2,617	9	31	162	681	1,734	34,121	55,104	63,601	34,306	6,181	226
Fifth child	71,477	–	379	1	7	12	70	289	10,123	19,035	23,591	14,862	3,331	156
Sixth child	29,860	–	38	–	–	3	3	32	2,739	7,573	10,238	7,197	1,967	108
Seventh child	13,562	–	12	–	–	2	5	5	684	2,994	4,678	3,913	1,195	86
Eighth child and over	13,898	–	5	–	–	–	1	4	242	1,780	4,130	5,013	2,497	231
Not stated	13,032	39	1,323	81	163	254	375	450	2,748	3,739	3,347	1,502	320	14
White	2,472,031	2,867	231,038	9,572	24,030	43,484	66,682	87,270	581,946	738,136	632,562	245,717	38,370	1,395
First child	1,036,661	2,795	187,933	9,245	22,499	38,274	54,120	63,795	299,540	298,522	181,160	57,601	8,800	310
Second child	839,893	49	36,727	285	1,364	4,694	10,932	19,452	196,350	270,952	241,984	82,714	10,833	284
Third child	385,296	5	5,067	9	86	342	1,280	3,350	65,045	116,122	133,377	57,507	7,916	257
Fourth child	130,758	1	517	1	6	23	125	362	15,330	35,929	47,978	26,229	4,596	178
Fifth child	41,430	–	44	–	1	2	6	35	3,134	9,695	15,585	10,536	2,321	115
Sixth child	15,436	–	8	–	–	2	2	4	569	2,895	5,876	4,719	1,302	67
Seventh child	6,523	–	3	–	–	1	1	1	121	892	2,322	2,375	760	50
Eighth child and over	6,574	–	2	–	–	–	–	2	51	347	1,628	2,836	1,589	121
Not stated	9,460	17	737	32	74	146	216	269	1,806	2,782	2,652	1,200	253	13
Black	641,273	6,295	140,278	12,177	20,888	28,864	36,418	41,931	203,219	146,862	97,689	39,921	6,774	235
First child	239,078	6,070	95,282	11,108	17,410	21,051	22,922	22,791	73,306	37,952	19,538	5,983	910	37
Second child	185,312	193	32,885	967	3,030	6,363	9,965	12,560	65,120	46,079	29,168	10,432	1,406	29
Third child	112,287	8	9,259	49	330	1,210	2,798	4,872	38,151	31,568	22,451	9,403	1,393	54
Fourth child	54,565	2	1,961	7	24	131	519	1,280	16,958	16,092	12,443	5,994	1,086	29
Fifth child	24,823	–	301	–	5	8	59	229	6,263	7,729	6,437	3,362	712	19
Sixth child	11,636	–	26	–	–	–	1	25	1,947	3,851	3,457	1,877	460	18
Seventh child	5,485	–	9	–	–	1	4	4	484	1,716	1,824	1,158	279	15
Eighth child and over	5,222	–	3	–	–	–	1	2	162	1,163	1,882	1,497	482	33
Not stated	2,865	22	552	46	89	100	149	168	828	712	489	215	46	1

[1] Includes races other than white and black.

Table 7. Birth rates by age of mother, live-birth order, Hispanic origin of mother, and by race of mother for mothers of non-Hispanic origin: United States, 1993

[Live-birth order refers to number of children born alive to mother]

Live-birth order and origin of mother	Age of mother										
			15–19 years								
	15–44 years[1]	10–14 years	Total	15–17 years	18–19 years	20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years
Hispanic											
Total	106.9	2.7	106.8	71.7	159.1	188.3	154.0	96.4	44.7	10.6	0.6
First child	40.7	2.6	79.7	61.0	107.5	82.6	41.4	17.4	6.0	1.2	0.0
Second child	31.4	0.1	22.2	9.5	41.0	64.5	51.3	26.7	9.5	1.7	0.0
Third child	18.9	*	4.2	1.0	9.0	28.6	35.7	24.8	10.6	2.0	0.1
Fourth child	8.9	*	0.6	0.1	1.4	9.3	16.1	14.8	8.0	1.7	0.1
Fifth child	3.8	*	0.1	*	0.1	2.5	6.2	7.1	4.9	1.3	0.1
Sixth and seventh child	2.4	*	0.0	*	0.1	0.8	3.0	4.6	4.2	1.5	0.1
Eighth child and over	0.7	*	*	*	*	0.1	0.4	1.0	1.6	1.0	0.1
Mexican	114.8	2.6	108.7	71.6	164.9	196.6	168.2	100.5	46.1	11.3	0.8
First child	42.8	2.5	81.2	60.9	111.8	85.0	40.5	14.8	4.6	1.0	*
Second child	33.0	0.1	22.7	9.6	42.6	68.5	55.1	24.5	7.9	1.5	*
Third child	20.5	*	4.1	1.0	9.0	30.0	41.3	27.0	10.5	1.9	0.1
Fourth child	10.2	*	0.6	0.1	1.3	9.7	19.6	17.9	9.3	1.9	0.1
Fifth child	4.5	*	0.1	*	0.1	2.5	7.6	9.0	6.1	1.6	0.1
Sixth and seventh child	2.9	*	*	*	*	0.8	3.7	6.0	5.3	2.0	0.2
Eighth child and over	0.8	*	*	*	*	0.0	0.4	1.3	2.2	1.4	0.2
Puerto Rican	82.5	3.1	110.0	73.4	181.0	193.1	108.4	56.3	27.1	6.2	0.5
First child	32.8	3.1	78.6	60.6	113.5	75.6	30.7	11.7	4.9	1.1	*
Second child	24.3	*	24.4	11.0	50.3	63.3	34.7	17.8	7.1	1.5	*
Third child	14.3	*	5.8	1.7	13.8	34.8	23.9	13.6	6.4	1.3	*
Fourth child	6.3	*	1.0	*	2.8	13.5	11.1	6.9	3.8	0.9	*
Fifth child	2.7	*	*	*	*	4.3	4.9	3.2	2.4	0.6	*
Sixth and seventh child	1.6	*	*	*	*	1.5	2.7	2.3	1.9	0.6	*
Eighth child and over	0.4	*	*	*	*	*	0.5	0.7	0.7	0.2	*
Cuban	55.5	*	33.0	20.4	49.7	68.9	102.0	86.9	31.0	4.7	*
First child	23.4	*	26.6	17.9	38.3	41.0	44.0	25.4	6.9	0.9	*
Second child	20.1	*	5.3	2.1	9.6	21.1	39.4	35.8	11.9	1.6	*
Third child	8.5	*	0.8	*	*	5.6	13.5	18.3	7.7	1.2	*
Fourth child	2.4	*	*	*	*	0.9	3.6	5.3	2.8	0.5	*
Fifth child	0.7	*	*	*	*	*	0.9	1.4	0.9	*	*
Sixth and seventh child	0.3	*	*	*	*	*	*	0.5	0.6	*	*
Eighth child and over	*	*	*	*	*	*	*	*	*	*	*
Other Hispanic[2]	105.0	2.7	106.9	78.2	141.7	175.2	147.1	110.4	52.4	12.5	0.5
First child	41.5	2.6	81.5	67.8	98.0	83.4	48.5	26.3	9.8	2.0	*
Second child	32.3	*	20.8	9.4	34.5	57.8	51.2	35.9	14.2	2.6	*
Third child	18.5	*	4.0	0.9	7.8	24.3	30.1	26.8	13.2	2.9	*
Fourth child	7.6	*	0.6	*	1.2	7.3	11.5	12.6	7.6	1.8	*
Fifth child	2.9	*	*	*	*	1.8	3.9	5.1	3.7	1.4	*
Sixth and seventh child	1.7	*	*	*	*	0.6	1.7	3.1	3.0	1.2	*
Eighth child and over	0.4	*	*	*	*	*	0.2	0.6	0.8	0.6	*

See footnotes at end of table.

Table 7. Birth rates by age of mother, live-birth order, Hispanic origin of mother, and by race of mother for mothers of non-Hispanic origin: United States, 1993—Con.

[Live-birth order refers to number of children born alive to mother]

Live-birth order and origin of mother	Age of mother										
			15–19 years								
	15–44 years[1]	10–14 years	Total	15–17 years	18–19 years	20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years
Non-Hispanic[3]											
Total[4]	62.2	1.2	52.4	32.7	81.7	101.1	108.8	77.7	31.1	5.5	0.3
First child	25.6	1.2	40.0	28.2	57.7	48.3	41.9	21.7	7.0	1.2	0.1
Second child	20.5	0.0	9.9	4.0	18.7	33.6	38.8	28.9	10.2	1.5	0.0
Third child	9.9	*	2.0	0.5	4.4	13.3	18.0	16.4	7.3	1.1	0.0
Fourth child	3.7	*	0.4	0.0	0.8	4.2	6.4	6.4	3.5	0.7	0.0
Fifth child	1.4	*	0.1	0.0	0.1	1.2	2.2	2.4	1.5	0.4	0.0
Sixth and seventh child	0.8	*	0.0	*	0.0	0.4	1.2	1.5	1.1	0.4	0.0
Eighth child and over	0.3	*	*	*	*	0.0	0.2	0.4	0.5	0.3	0.0
White	58.1	0.5	40.2	22.4	66.8	90.8	107.6	78.0	30.4	5.2	0.2
First child	24.4	0.5	32.8	20.4	51.3	46.9	43.7	22.4	7.2	1.2	0.0
Second child	19.8	0.0	6.4	1.9	13.2	30.7	39.6	30.0	10.3	1.5	0.0
Third child	9.1	*	0.9	0.1	2.0	10.2	17.0	16.5	7.2	1.1	0.0
Fourth child	3.1	*	0.1	0.0	0.2	2.4	5.3	5.9	3.3	0.6	0.0
Fifth child	1.0	*	0.0	*	0.0	0.5	1.4	1.9	1.3	0.3	0.0
Sixth and seventh child	0.5	*	*	*	*	0.1	0.6	1.0	0.9	0.3	0.0
Eighth child and over	0.2	*	*	*	*	0.0	0.1	0.2	0.4	0.2	0.0
Black	81.9	4.7	111.3	81.9	155.6	156.0	110.3	68.1	29.4	5.9	0.3
First child	30.7	4.5	75.9	65.8	91.1	56.5	28.7	13.7	4.4	0.8	0.0
Second child	23.8	0.1	26.2	13.8	44.9	50.2	34.8	20.4	7.7	1.2	0.0
Third child	14.4	*	7.4	2.1	15.3	29.4	23.8	15.7	7.0	1.2	0.1
Fourth child	7.0	*	1.6	0.2	3.6	13.1	12.1	8.7	4.4	1.0	0.0
Fifth child	3.2	*	0.2	*	0.6	4.8	5.8	4.5	2.5	0.6	*
Sixth and seventh child	2.2	*	0.0	*	0.1	1.9	4.2	3.7	2.2	0.6	0.0
Eighth child and over	0.7	*	*	*	*	0.1	0.9	1.3	1.1	0.4	0.0

[1]Rates computed by relating total births, regardless of age of mother, to women aged 15–44 years.
[2]Includes Central and South American and other and unknown Hispanic.
[3]Includes origin not stated.
[4]Includes races other than white and black.

Table 8. Live births by race of mother, birth rates, and fertility rates: United States and each State, 1993

[By place of residence. Birth rates per 1,000 estimated population in each area; fertility rates per 1,000 women aged 15–44 years estimated in each area]

State	Number					Birth rate	Fertility rate
	All races	White	Black	American Indian[1]	Asian or Pacific Islander		
United States	4,000,240	3,149,833	658,875	38,732	152,800	15.5	67.6
Alabama	61,706	39,990	21,116	107	493	14.8	63.9
Alaska	11,073	7,508	585	2,460	520	18.5	77.9
Arizona	69,056	59,701	2,403	5,784	1,168	17.5	79.7
Arkansas	34,289	25,986	7,848	197	258	14.1	64.6
California	585,324	478,472	44,973	3,336	58,543	18.8	80.5
Colorado	54,022	49,256	2,939	533	1,294	15.2	64.2
Connecticut	46,700	39,539	5,960	106	1,095	14.2	62.7
Delaware	10,568	7,943	2,411	21	193	15.1	64.1
District of Columbia	10,629	1,595	8,500	10	524	18.4	70.8
Florida	192,537	144,486	44,483	442	3,126	14.0	67.0
Georgia	110,622	68,759	39,873	111	1,879	16.0	65.7
Hawaii	19,593	5,594	624	189	13,186	16.8	74.8
Idaho	17,440	16,891	46	286	217	15.8	72.1
Illinois	190,788	142,175	42,900	231	5,482	16.3	71.1
Indiana	83,949	73,713	9,374	90	772	14.7	63.6
Iowa	37,826	35,972	1,092	175	587	13.4	61.8
Kansas	37,406	33,035	3,238	353	780	14.8	66.9
Kentucky	53,000	47,674	4,840	55	431	14.0	60.3
Louisiana	69,402	38,528	29,698	257	919	16.2	69.1
Maine	15,065	14,779	57	91	138	12.2	53.3
Maryland	74,988	46,812	24,658	221	3,297	15.1	62.8
Massachusetts	84,668	72,845	8,356	111	3,356	14.1	59.5
Michigan	139,855	109,182	28,312	762	1,599	14.8	63.6
Minnesota	64,648	58,302	2,828	1,139	2,379	14.3	62.4
Mississippi	42,149	21,258	20,421	183	287	16.0	69.2
Missouri	75,253	61,045	13,007	229	972	14.4	64.3
Montana	11,365	9,986	48	1,246	85	13.5	63.1
Nebraska	23,224	21,233	1,260	371	360	14.4	65.1
Nevada	22,403	19,075	1,997	367	964	16.2	73.1
New Hampshire	15,436	15,149	109	25	153	13.7	57.6
New Jersey	117,686	88,852	23,128	385	5,321	15.0	65.8
New Mexico	27,852	23,082	561	3,872	337	17.2	76.6
New York	282,392	208,093	60,083	939	13,277	15.6	67.2
North Carolina	101,357	68,998	29,487	1,466	1,406	14.6	62.6
North Dakota	8,690	7,742	89	763	96	13.6	63.1
Ohio	158,793	131,439	25,458	216	1,680	14.4	62.7
Oklahoma	46,243	36,135	4,944	4,430	734	14.3	65.4
Oregon	41,576	38,703	893	574	1,406	13.7	61.5
Pennsylvania	160,762	133,063	24,411	179	3,109	13.4	60.6
Rhode Island	13,976	12,204	1,151	132	489	14.0	60.9
South Carolina	53,835	32,690	20,520	105	520	14.8	62.8
South Dakota	10,719	8,827	77	1,721	94	15.0	70.4
Tennessee	73,017	54,609	17,578	126	704	14.3	61.9
Texas	322,071	272,211	41,694	700	7,466	17.9	76.1
Utah	37,127	35,198	278	676	975	20.0	85.9
Vermont	7,457	7,346	29	11	71	13.0	55.1
Virginia	94,944	68,345	23,334	134	3,131	14.7	60.8
Washington	78,645	68,921	3,145	1,697	4,882	15.0	64.6
West Virginia	21,792	20,834	818	15	125	12.0	54.0
Wisconsin	69,767	59,868	7,180	866	1,853	13.8	61.2
Wyoming	6,555	6,190	61	237	67	14.0	62.7

[1]Includes births to Aleuts and Eskimos.

Table 9. Live births by Hispanic origin of mother and by race of mother for mothers of non-Hispanic origin: United States and each State, 1993

[By place of residence]

State	All origins	Origin of mother									
		Hispanic						Non-Hispanic			
		Total	Mexican	Puerto Rican	Cuban	Central and South American	Other and unknown Hispanic	Total[1]	White	Black	Not stated
United States	4,000,240	654,418	443,733	58,102	11,916	92,371	48,296	3,295,345	2,472,031	641,273	50,477
Alabama	61,706	509	288	87	15	81	38	61,137	39,508	21,067	60
Alaska	11,073	439	221	45	8	79	86	10,620	7,106	570	14
Arizona	69,056	22,579	21,693	149	39	423	275	45,340	36,517	2,272	1,137
Arkansas	34,289	579	473	23	5	42	36	33,668	25,403	7,822	42
California	585,324	262,313	221,905	2,162	864	29,739	7,643	316,168	213,326	43,497	6,843
Colorado	54,022	10,268	5,823	139	35	204	4,067	43,695	39,156	2,849	59
Connecticut	46,700	5,381	188	3,929	43	874	347	38,952	32,664	5,199	2,367
Delaware	10,568	472	190	187	9	60	26	10,079	7,510	2,363	17
District of Columbia	10,629	930	44	8	3	830	45	9,692	1,355	8,154	7
Florida	192,537	31,550	5,758	5,327	7,976	10,409	2,080	160,921	114,016	43,470	66
Georgia	110,622	3,467	2,328	313	90	520	216	106,939	65,281	39,707	216
Hawaii	19,593	2,192	394	662	12	61	1,063	17,392	4,858	602	9
Idaho	17,440	1,850	1,555	17	8	35	235	15,568	15,044	44	22
Illinois	190,788	28,610	22,028	3,228	223	1,540	1,591	162,024	113,842	42,573	154
Indiana	83,949	2,131	1,608	260	18	87	158	81,701	71,507	9,341	117
Iowa	37,826	967	804	23	6	52	82	36,820	35,004	1,084	39
Kansas	37,406	2,417	2,040	65	12	94	206	34,566	30,262	3,204	423
Kentucky	53,000	401	205	51	12	26	107	52,547	47,266	4,822	52
Louisiana	69,402	1,001	282	80	55	292	292	68,346	37,658	29,633	55
Maine	15,065	107	26	8	–	8	65	14,614	14,340	54	344
Maryland	74,988	2,996	534	271	71	1,878	242	71,183	44,519	23,967	809
Massachusetts	84,668	8,252	226	4,484	100	3,141	301	75,971	65,659	6,860	445
Michigan	139,855	4,389	2,824	369	48	210	938	129,573	99,426	27,950	5,893
Minnesota	64,648	1,560	1,158	80	15	108	199	55,648	50,870	2,163	7,440
Mississippi	42,149	141	68	14	8	7	44	41,977	21,091	20,417	31
Missouri	75,253	1,150	855	71	19	114	91	74,062	59,912	12,974	41
Montana	11,365	190	146	1	1	4	38	10,762	9,445	34	413
Nebraska	23,224	1,261	964	23	5	65	204	21,591	19,621	1,251	372
Nevada	22,403	4,413	3,563	91	80	423	256	17,958	14,739	1,958	32
New Hampshire	15,436	190	43	55	3	23	66	13,020	12,795	83	2,226
New Jersey	117,686	17,650	1,563	8,259	941	5,884	1,003	99,699	72,747	21,384	337
New Mexico	27,852	13,054	3,945	43	48	69	8,949	14,797	10,155	525	1
New York	282,392	51,847	5,221	19,197	515	23,534	3,380	215,120	147,516	53,848	15,425
North Carolina	101,357	2,560	1,695	308	37	370	150	98,772	66,506	29,435	25
North Dakota	8,690	122	69	1	1	14	37	8,485	7,544	88	83
Ohio	158,793	2,655	1,191	1,019	46	139	260	155,839	128,656	25,321	299
Oklahoma	46,243	2,133	1,638	122	15	15	343	44,039	34,074	4,896	71
Oregon	41,576	4,002	3,660	42	14	151	135	37,545	34,726	890	29
Pennsylvania	160,762	6,302	582	4,101	100	625	894	154,241	126,991	24,013	219
Rhode Island	13,976	1,594	94	546	12	826	116	11,125	9,624	925	1,257
South Carolina	53,835	617	293	118	11	58	137	53,180	32,116	20,482	38
South Dakota	10,719	122	84	12	3	14	9	10,589	8,721	76	8
Tennessee	73,017	694	407	75	22	65	125	72,272	53,896	17,550	51
Texas	322,071	131,293	114,250	814	243	5,885	10,101	190,527	141,086	41,417	251
Utah	37,127	2,456	1,707	64	11	370	304	34,647	32,834	202	24
Vermont	7,457	25	6	6	3	4	6	7,045	6,940	28	387
Virginia	94,944	4,135	763	461	69	2,486	356	90,717	64,359	23,170	92
Washington	78,645	7,708	6,503	188	24	217	776	68,875	59,636	3,036	2,062
West Virginia	21,792	81	25	10	–	9	37	21,703	20,771	815	8
Wisconsin	69,767	2,175	1,397	485	16	205	72	67,530	57,720	7,128	62
Wyoming	6,555	488	406	9	2	2	69	6,064	5,713	60	3

[1] Includes races other than white and black.

Table 10. Total number of births, rates, and percent of births with selected demographic characteristics, by specified race of mother: United States, 1993

Characteristic	All races	White	Black	American Indian[1]	Asian or Pacific Islander					
					Total	Chinese	Japanese	Hawaiian	Filipino	Other
					Number					
Births	4,000,240	3,149,833	658,875	38,732	152,800	25,530	8,699	5,810	29,643	83,118
					Rate					
Birth rate[2]	15.5	14.7	20.5	17.8	17.7	---	---	---	---	---
Fertility rate[3]	67.6	65.4	80.5	73.4	66.7	---	---	---	---	---
Total fertility rate[4]	2,046.0	1,982.0	2,384.5	2,141.0	1,935.5	---	---	---	---	---
Sex ratio[5]	1,050	1,054	1,028	1,036	1,066	1,080	1,063	1,060	1,061	1,064
					Percent					
Births to mothers under 20 years	12.8	11.0	22.7	20.3	5.7	1.0	2.7	18.5	5.8	6.5
Fourth- and higher-order births	10.7	9.5	15.9	21.7	10.2	2.9	3.9	15.8	7.5	13.6
Interval since last live birth of less than 18 months[6]	12.5	11.1	18.4	18.5	14.7	10.8	7.0	17.8	11.4	17.4
Births to unmarried mothers	31.0	23.6	68.7	55.8	15.7	6.7	10.0	47.8	17.7	16.1
Mothers completing 12 years or more of school	76.7	78.0	70.2	65.2	81.9	85.7	97.4	82.7	91.2	75.4
Mothers born in the 50 States and D.C	82.4	83.7	91.3	95.8	14.8	9.0	49.8	97.1	15.1	7.0

[1]Includes births to Aleuts and Eskimos.
[2]Rate per 1,000 population.
[3]Rate per 1,000 women aged 15–44 years.
[4]Rates are sums of birth rates for 5-year age groups multiplied by 5.
[5]Male live births per 1,000 female live births.
[6]Refers only to second- and higher-order births.

Table 11. Total number of births, rates, and percent of births with selected demographic characteristics, by Hispanic origin of mother and by race of mother for mothers of non-Hispanic origin: United States, 1993

Characteristic	Origin of mother									
		Hispanic						Non-Hispanic		
	All origins[1]	Total	Mexican	Puerto Rican	Cuban	Central and South American	Other and unknown Hispanic	Total[2]	White	Black
	Number									
Births	4,000,240	654,418	443,733	58,102	11,916	92,371	48,296	3,295,345	2,472,031	641,273
	Rate									
Birth rate[3]	15.5	26.0	27.4	21.9	10.5	26.9		14.2	12.9	20.8
Fertility rate[4]	67.6	106.9	114.8	82.5	55.5	105.0		62.2	58.1	81.9
Total fertility rate[5]	2,046.0	3,020.5	3,174.0	2,523.5	1,632.5	3038.5		1,890.5	1,764.5	2,430.0
Sex ratio[6]	1,050	1,044	1,042	1,055	1,063	1,046	1,037	1,051	1,057	1,028
	Percent									
Births to mothers under 20 years	12.8	17.4	18.2	22.3	6.8	9.9	21.0	12.0	9.5	22.9
Fourth- and higher-order births	10.7	14.8	16.1	13.4	6.3	12.4	11.5	9.9	8.2	15.9
Interval since last live birth of less than 18 months[7]	12.5	14.9	15.3	17.2	10.3	12.0	15.1	12.1	10.1	18.5
Births to unmarried mothers	31.0	40.0	37.0	59.4	21.0	45.2	38.7	29.3	19.5	68.9
Mothers completing 12 years or more of school	76.7	46.6	39.6	59.7	85.4	57.0	66.1	82.6	86.0	70.4
Mothers born in the 50 States and D.C	82.4	37.5	36.6	59.2	31.5	6.2	81.9	91.3	95.5	92.6

[1]Includes origin not stated.
[2]Includes races other than white and black.
[3]Rate per 1,000 population.
[4]Rate per 1,000 women aged 15–44 years.
[5]Rates are sums of birth rates for 5-year age groups multiplied by 5.
[6]Male live births per 1,000 female live births.
[7]Refers only to second- and higher-order births.

Table 12. Live births by race of mother and observed and seasonally adjusted birth and fertility rates, by month: United States, 1993

[Rates on an annual basis per 1,000 population for specified month. Birth rates based on the total population. Fertility rates based on women aged 15–44 years]

Month	Number			Observed		Seasonally adjusted[1]	
	All races[2]	White	Black	Birth rate	Fertility rate	Birth rate	Fertility rate
Total	4,000,240	3,149,833	658,875	15.5	67.6	. . .	. . .
January	323,073	250,215	57,419	14.8	64.4	15.5	67.3
February	304,656	238,236	51,947	15.5	67.2	15.8	68.8
March	342,187	270,202	55,892	15.7	68.2	15.9	69.1
April	327,042	260,615	51,017	15.5	67.3	15.6	68.0
May	335,989	266,750	53,320	15.4	66.9	15.5	67.4
June	335,349	266,525	52,858	15.8	69.0	15.6	67.8
July	352,554	277,198	58,802	16.1	70.2	15.5	67.5
August	350,898	276,142	57,845	16.0	69.8	15.3	66.8
September	348,013	274,936	56,413	16.4	71.6	15.6	68.0
October	332,937	262,074	54,653	15.2	66.3	15.2	66.5
November	316,379	248,496	52,397	14.9	65.0	15.4	67.4
December	331,163	258,444	56,312	15.1	65.9	15.4	67.4

[1]The method of seasonal adjustment, developed by the U.S. Bureau of the Census, is described in *The X-11 Variant of the Census Method II Seasonal Adjustment Program*, Technical Paper No. 15 (1967 revision).
[2]Includes races other than white and black.

Table 13. Live births by day of week and index of occurrence by method of delivery, day of week, and race of mother: United States, 1993

Day of week and race of mother	Average number of births	Index of occurrence[1]				
		Method of delivery				
				Cesarean		
		Total[2]	Vaginal	Total	Primary	Repeat
All races[3]	10,960	100.0	100.0	100.0	100.0	100.0
Sunday	8,469	77.3	83.0	56.9	67.6	39.1
Monday	11,201	102.2	101.0	106.8	98.5	120.6
Tuesday	12,210	111.4	109.0	119.7	115.6	126.6
Wednesday	11,997	109.5	107.3	117.3	114.9	121.3
Thursday	11,889	108.5	106.7	115.0	112.6	118.9
Friday	11,796	107.6	104.7	118.1	112.3	127.7
Saturday	9,140	83.4	88.3	65.9	78.3	45.2
White	8,630	100.0	100.0	100.0	100.0	100.0
Sunday	6,502	75.3	81.3	54.5	65.7	36.1
Monday	8,866	102.7	101.4	107.8	98.9	122.3
Tuesday	9,702	112.4	110.0	120.9	116.6	127.8
Wednesday	9,518	110.3	108.1	118.2	115.6	122.4
Thursday	9,427	109.2	107.4	115.7	113.5	119.2
Friday	9,332	108.1	105.0	119.2	112.9	129.5
Saturday	7,046	81.7	86.8	63.5	76.6	42.1
Black	1,805	100.0	100.0	100.0	100.0	100.0
Sunday	1,521	84.3	89.4	66.3	74.5	51.8
Monday	1,805	100.0	99.3	102.5	96.1	113.8
Tuesday	1,951	108.1	105.7	116.2	112.4	122.8
Wednesday	1,919	106.3	104.0	114.3	112.4	117.8
Thursday	1,901	105.3	103.6	111.5	108.7	116.4
Friday	1,909	105.7	103.6	113.3	110.2	118.7
Saturday	1,629	90.2	94.3	75.7	85.5	58.3

[1]Index is the ratio of the average number of births by a specified method of delivery on a given day of the week to the average daily number of births by a specified method of delivery for the year, multiplied by 100.
[2]Includes method of delivery not stated.
[3]Includes races other than white and black.

Table 14. Number, rate, and ratio of births to unmarried women by age, race, and Hispanic origin of mother: United States, 1993

Age of mother	Number				Rate per 1,000 unmarried women in specified group				Ratio per 1,000 live births			
	All races[1]	White	Black	Hispanic[2]	All races[1]	White	Black	Hispanic[2]	All races[1]	White	Black	Hispanic[2]
All ages	1,240,172	742,129	452,476	261,586	[3]45.3	[3]35.9	[3]84.0	[3]95.2	310.0	235.6	686.7	399.7
Under 15 years	11,467	4,868	6,293	2,358	- - -	- - -	- - -	- - -	913.4	845.9	980.7	799.3
15–19 years	357,432	213,080	133,031	69,523	44.5	33.6	102.4	74.7	713.3	623.4	929.3	628.1
15 years	26,153	13,280	12,018	5,416					869.6	797.3	970.1	758.3
16 years	50,689	28,656	20,489	10,548	30.6	22.1	76.8	51.9	818.1	740.1	961.1	713.4
17 years	75,370	45,096	27,905	14,902					765.2	684.0	947.6	662.1
18 years	97,450	59,890	34,509	18,430	66.9	52.4	141.6	114.6	704.6	619.0	927.1	613.3
19 years	107,770	66,158	38,110	20,227					625.7	534.6	890.9	558.6
20–24 years	438,538	263,538	159,598	88,946	69.2	54.2	142.2	140.5	422.4	333.5	766.7	434.1
25–29 years	233,776	139,905	84,604	55,826	57.1	46.7	94.5	137.7	207.1	151.9	558.2	317.1
30–34 years	132,263	79,136	47,330	29,862	38.5	32.2	57.3	90.9	146.8	105.6	468.8	275.1
35–39 years	55,570	34,283	18,526	12,389	19.0	16.4	25.9	47.8	155.6	117.1	448.1	289.5
40 years and over	11,126	7,319	3,094	2,682	[4]4.4	[4]3.9	[4]5.8	[4]14.1	181.2	148.8	425.2	314.7

[1]Includes races other than white and black.
[2]Persons of Hispanic origin may be of any race.
[3]Rates computed by relating total births to unmarried mothers, regardless of age of mother, to unmarried women aged 15–44 years.
[4]Rates computed by relating births to unmarried mothers aged 40 years and over to unmarried women aged 40–44 years.

NOTE: For 44 States and the District of Columbia, marital status of mother is reported on the birth certificate; for 6 States, mother's marital status is inferred; see Technical notes.

Table 15. Birth rates for unmarried women by age of mother and race: United States, 1970, 1975, and 1980–93

[Rates are live births to unmarried women per 1,000 unmarried women in specified group, estimated as of July 1]

Year and race	Age of mother								
	15–44 years[1]	15–19 years			20–24 years	25–29 years	30–34 years	35–39 years	40–44 years[2]
		Total	15–17 years	18–19 years					
All races[3]									
1993[4]	45.3	44.5	30.6	66.9	69.2	57.1	38.5	19.0	4.4
1992[4]	45.2	44.6	30.4	67.3	68.5	56.5	37.9	18.8	4.1
1991[4]	45.2	44.8	30.9	65.7	68.0	56.5	38.1	18.0	3.8
1990[4]	43.8	42.5	29.6	60.7	65.1	56.0	37.6	17.3	3.6
1989[4]	41.6	40.1	28.7	56.0	61.2	52.8	34.9	16.0	3.4
1988[4]	38.5	36.4	26.4	51.5	56.0	48.5	32.0	15.0	3.2
1987[4]	36.0	33.8	24.5	48.9	52.6	44.5	29.6	13.5	2.9
1986[4]	34.2	32.3	22.8	48.0	49.3	42.2	27.2	12.2	2.7
1985[4]	32.8	31.4	22.4	45.9	46.5	39.9	25.2	11.6	2.5
1984[4,5]	31.0	30.0	21.9	42.5	43.0	37.1	23.3	10.9	2.5
1983[4,5]	30.3	29.5	22.0	40.7	41.8	35.5	22.4	10.2	2.6
1982[4,5]	30.0	28.7	21.5	39.6	41.5	35.1	21.9	10.0	2.7
1981[4,5]	29.5	27.9	20.9	39.0	41.1	34.5	20.8	9.8	2.6
1980[4,5]	29.4	27.6	20.6	39.0	40.9	34.0	21.1	9.7	2.6
1980[5,6]	28.4	27.5	20.7	38.7	39.7	31.4	18.5	8.4	2.3
1975[5,6]	24.5	23.9	19.3	32.5	31.2	27.5	17.9	9.1	2.6
1970[6,7]	26.4	22.4	17.1	32.9	38.4	37.0	27.1	13.6	3.5
White									
Race of mother:									
1993[4]	35.9	33.6	22.1	52.4	54.2	46.7	32.2	16.4	3.9
1992[4]	35.2	33.0	21.6	51.5	52.7	45.4	31.5	16.2	3.6
1991[4]	34.6	32.8	21.8	49.6	51.5	44.6	31.1	15.2	3.2
1990[4]	32.9	30.6	20.4	44.9	48.2	43.0	29.9	14.5	3.2
1989[4]	30.2	28.0	19.3	40.2	43.8	39.1	26.8	13.1	2.9
1988[4]	27.4	25.3	17.6	36.8	39.2	35.4	24.2	12.1	2.7
1987[4]	25.3	23.2	16.2	34.5	36.6	32.0	22.3	10.7	2.4
1986[4]	23.9	21.8	14.9	33.5	34.2	30.5	20.1	9.7	2.2
1985[4]	22.5	20.8	14.5	31.2	31.7	28.5	18.4	9.0	2.0
1984[4,5]	20.6	19.3	13.7	27.9	28.5	25.5	16.8	8.4	2.0
1983[4,5]	19.8	18.7	13.6	26.4	27.1	23.8	15.9	7.8	2.0
1982[4,5]	19.3	18.0	13.1	25.3	26.5	23.1	15.3	7.4	2.1
1981[4,5]	18.6	17.2	12.6	24.6	25.8	22.3	14.2	7.2	1.9
1980[4,5]	18.1	16.5	12.0	24.1	25.1	21.5	14.1	7.1	1.8
Race of child:									
1980[5,6]	16.2	15.9	11.7	22.8	22.4	17.3	10.5	5.3	1.4
1975[5,6]	12.4	12.0	9.6	16.5	15.5	14.8	9.8	5.4	1.5
1970[6,7]	13.9	10.9	7.5	17.6	22.5	21.1	14.2	7.6	2.0

See footnotes at end of table.

Table 15. Birth rates for unmarried women by age of mother and race: United States, 1970, 1975, and 1980–93—Con.

[Rates are live births to unmarried women per 1,000 unmarried women in specified group, estimated as of July 1]

Year and race	Age of mother								
		15–19 years							
	15–44 years[1]	Total	15–17 years	18–19 years	20–24 years	25–29 years	30–34 years	35–39 years	40–44 years[2]
Black									
Race of mother:									
1993[4]	84.0	102.4	76.8	141.6	142.2	94.5	57.3	25.9	5.8
1992[4]	86.5	105.9	78.0	147.8	144.3	98.2	57.7	25.8	5.4
1991[4]	89.5	108.5	80.4	148.7	147.5	100.9	60.1	25.6	5.4
1990[4]	90.5	106.0	78.8	143.7	144.8	105.3	61.5	25.5	5.1
1989[4]	90.7	104.5	78.9	140.9	142.4	102.9	60.5	24.9	5.0
1988[4]	86.5	96.1	73.5	130.5	133.6	97.2	57.4	24.1	5.0
1987[4]	82.6	90.9	69.9	123.0	126.1	91.6	53.1	22.4	4.7
1986[4]	79.0	88.5	67.0	121.1	118.0	84.6	50.0	20.6	4.4
1985[4]	77.0	87.6	66.8	117.9	113.1	79.3	47.5	20.4	4.3
1984[4,5]	75.2	86.1	66.5	113.6	107.9	77.8	43.8	19.4	4.3
1983[4,5]	76.2	85.5	66.8	111.9	107.2	79.7	43.8	19.4	4.8
1982[4,5]	77.9	85.1	66.3	112.7	109.3	82.7	44.1	19.5	5.2
1981[4,5]	79.4	85.0	65.9	114.2	110.7	83.1	45.5	19.6	5.6
1980[4,5]	81.1	87.9	68.8	118.2	112.3	81.4	46.7	19.0	5.5
Race of child:									
1980[5,6]	83.2	90.3	70.6	121.8	116.0	82.9	47.0	18.5	5.5
1975[5,6]	84.2	93.5	76.8	123.8	108.0	75.7	50.0	20.5	7.2
1970[6,7]	95.5	96.9	77.9	136.4	131.5	100.9	71.8	32.9	10.4

[1]Rates computed by relating total births to unmarried mothers, regardless of age of mother, to unmarried women aged 15–44 years.
[2]Rates computed by relating births to unmarried mothers aged 40 years and over to unmarried women aged 40–44 years.
[3]Includes races other than white and black.
[4]Data for States in which marital status was not reported have been inferred and included with data from the remaining States; see Technical notes.
[5]Based on 100 percent of births in selected States and on a 50-percent sample of births in all other States; see Technical notes.
[6]Births to unmarried women are estimated for the United States from data for registration areas in which marital status of mother was reported; see Technical notes.
[7]Based on a 50-percent sample of births.

Table 16. Number and percent of births to unmarried women and number and percent of births of low birthweight, by race of mother: United States and each State, 1993

[By place of residence]

State	Births to unmarried women[1]						Low birthweight[2]					
	Number			Percent			Number			Percent		
	All races[3]	White	Black	All races[3]	White	Black	All races[3]	White	Black	All races[3]	White	Black
United States	1,240,172	742,129	452,476	31.0	23.6	68.7	288,482	188,249	87,744	7.2	6.0	13.3
Alabama	20,680	5,956	14,638	33.5	14.9	69.3	5,347	2,648	2,652	8.7	6.6	12.6
Alaska	3,101	1,512	193	28.0	20.1	33.0	547	336	55	4.9	4.5	9.4
Arizona	26,151	20,563	1,585	37.9	34.4	66.0	4,595	3,830	320	6.7	6.4	13.4
Arkansas	10,878	5,132	5,644	31.7	19.7	71.9	2,815	1,798	981	8.2	6.9	12.5
California	206,376	168,544	28,204	35.3	35.2	62.7	35,163	25,698	5,674	6.0	5.4	12.6
Colorado	13,373	11,183	1,716	24.8	22.7	58.4	4,533	3,937	438	8.4	8.0	14.9
Connecticut	13,919	9,301	4,220	29.8	23.5	70.8	3,207	2,388	730	6.9	6.0	12.3
Delaware	3,577	1,766	1,788	33.8	22.2	74.2	827	462	343	7.8	5.8	14.2
District of Columbia	7,211	259	6,696	67.8	16.2	78.8	1,551	91	1,417	14.6	5.7	16.7
Florida	67,431	36,079	30,723	35.0	25.0	69.1	14,468	8,854	5,360	7.5	6.1	12.1
Georgia	39,575	12,277	27,032	35.8	17.9	67.8	9,653	4,318	5,193	8.7	6.3	13.0
Hawaii	5,328	899	110	27.2	16.1	17.6	1,335	289	74	6.8	5.2	11.9
Idaho	3,268	3,081	20	18.7	18.2	43.5	925	885	3	5.3	5.2	*
Illinois	65,130	30,832	33,824	34.1	21.7	78.8	15,365	8,400	6,565	8.1	5.9	15.3
Indiana	25,844	18,590	7,154	30.8	25.2	76.3	5,851	4,586	1,208	7.0	6.2	12.9
Iowa	9,297	8,243	847	24.6	22.9	77.6	2,172	1,982	138	5.7	5.5	12.6
Kansas	9,696	7,209	2,172	25.9	21.8	67.1	2,460	1,978	414	6.6	6.0	12.8
Kentucky	14,401	10,821	3,502	27.2	22.7	72.4	3,781	3,148	605	7.1	6.6	12.5
Louisiana	29,179	7,696	21,220	42.0	20.0	71.5	6,477	2,402	4,002	9.3	6.2	13.5
Maine	4,061	3,952	21	27.0	26.7	36.8	813	796	4	5.4	5.4	*
Maryland	24,335	8,415	15,274	32.5	18.0	61.9	6,341	2,749	3,359	8.5	5.9	13.7
Massachusetts	22,380	16,383	5,198	26.4	22.5	62.2	5,195	4,112	879	6.2	5.7	10.6
Michigan	36,326	15,955	20,013	26.0	14.6	70.7	10,661	6,455	4,044	7.6	5.9	14.3
Minnesota	15,099	11,668	2,039	23.4	20.0	72.1	3,532	2,937	335	5.5	5.0	11.9
Mississippi	18,718	3,514	15,055	44.4	16.5	73.7	4,248	1,425	2,788	10.1	6.7	13.7
Missouri	24,353	13,794	10,302	32.4	22.6	79.2	5,644	3,822	1,742	7.5	6.3	13.4
Montana	3,104	2,209	19	27.3	22.1	*	682	588	4	6.0	5.9	*
Nebraska	5,449	4,193	923	23.5	19.7	73.3	1,360	1,158	151	5.9	5.5	12.0
Nevada	7,614	5,748	1,418	34.0	30.1	71.0	1,657	1,241	307	7.4	6.5	15.4
New Hampshire	3,179	3,096	59	20.6	20.4	54.1	765	738	12	5.0	4.9	*
New Jersey	31,949	15,997	15,489	27.1	18.0	67.0	8,884	5,391	3,114	7.6	6.1	13.5
New Mexico	11,526	8,428	328	41.4	36.5	58.5	2,032	1,688	70	7.3	7.3	12.5
New York	105,101	60,058	42,388	37.2	28.9	70.5	21,702	12,930	7,787	7.7	6.2	13.0
North Carolina	32,586	11,713	19,943	32.1	17.0	67.6	8,739	4,546	3,949	8.6	6.6	13.4
North Dakota	1,999	1,436	25	23.0	18.5	28.1	461	414	7	5.3	5.3	*
Ohio	52,385	32,226	19,914	33.0	24.5	78.2	11,875	8,207	3,542	7.5	6.3	13.9
Oklahoma	13,441	8,107	3,367	29.1	22.4	68.1	3,071	2,204	604	6.7	6.1	12.3
Oregon	11,730	10,515	642	28.2	27.2	71.9	2,179	1,959	102	5.2	5.1	11.4
Pennsylvania	51,783	31,748	19,463	32.2	23.9	79.7	11,828	8,017	3,552	7.4	6.0	14.6
Rhode Island	4,436	3,392	788	31.7	27.8	68.5	895	716	123	6.5	5.9	10.8
South Carolina	19,359	5,715	13,567	36.0	17.5	66.1	5,012	2,188	2,781	9.3	6.7	13.6
South Dakota	2,968	1,678	21	27.7	19.0	27.3	587	466	10	5.5	5.3	*
Tennessee	24,556	11,335	13,070	33.6	20.8	74.4	6,384	3,805	2,521	8.8	7.0	14.4
Texas	54,670	35,395	18,538	17.0	13.0	44.5	22,918	16,944	5,438	7.1	6.2	13.1
Utah	5,744	5,137	125	15.5	14.6	45.0	2,206	2,066	24	5.9	5.9	8.7
Vermont	1,805	1,765	16	24.2	24.0	*	424	414	6	5.7	5.6	*
Virginia	27,532	12,284	14,853	29.0	18.0	63.7	6,917	3,833	2,870	7.3	5.6	12.3
Washington	20,670	16,879	1,746	26.3	24.5	55.5	4,083	3,392	353	5.2	4.9	11.3
West Virginia	6,328	5,704	607	29.0	27.4	74.2	1,570	1,460	99	7.2	7.0	12.1
Wisconsin	18,882	12,213	5,945	27.1	20.4	82.8	4,267	3,107	986	6.1	5.2	13.7
Wyoming	1,689	1,534	32	25.8	24.8	52.5	478	451	9	7.3	7.3	*

[1]For 44 States and the District of Columbia, marital status of mother is reported on the birth certificate; for 6 States, mother's marital status is inferred; see Technical notes.
[2]Less than 2,500 grams (5 lb 8 oz).
[3]Includes races other than white and black.

Table 17. Birth rates by age and race of father: United States, 1980–93

[Rates are live births per 1,000 men in specified group, enumerated as of April 1 for 1980 and 1990 and estimated as of July 1 for all other years. Figures for age of father not stated are distributed]

Year and race of father	15–54 years[1]	Age of father: 15–19 years[2]	20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years	50–54 years	55 years and over
All races[3]										
1993	54.4	24.8	87.1	110.8	93.5	51.1	20.2	7.3	2.7	0.4
1992	55.8	24.6	87.7	113.1	94.2	51.3	20.4	7.3	2.7	0.4
1991	57.1	24.8	88.0	114.7	95.1	51.8	20.2	7.5	2.7	0.4
1990	58.4	23.5	88.0	116.4	97.8	53.0	21.0	7.5	2.8	0.4
1989	57.2	21.9	85.4	114.3	94.8	51.3	20.4	7.4	2.7	0.6
1988	55.8	19.6	82.4	111.6	93.2	49.9	19.9	7.1	2.7	0.4
1987	55.0	18.3	80.5	109.9	91.2	48.6	19.0	6.9	2.6	0.4
1986	54.8	17.9	80.3	109.6	90.3	46.8	18.3	6.7	2.6	0.4
1985	55.6	18.0	81.2	112.3	91.1	47.3	18.1	6.6	2.5	0.4
1984[4]	55.0	17.8	80.7	111.4	89.9	46.0	17.8	6.3	2.4	0.4
1983[4]	55.1	18.2	82.6	113.0	89.1	45.2	17.4	6.4	2.3	0.4
1982[4]	56.4	18.6	86.5	117.3	90.3	44.5	17.5	6.4	2.3	0.4
1981[4]	56.3	18.4	88.4	119.1	88.7	43.3	17.0	6.2	2.3	0.4
1980[4]	57.0	18.8	92.0	123.1	91.0	42.8	17.1	6.1	2.2	0.3
White										
1993	50.9	19.2	77.9	108.0	92.4	49.2	18.6	6.4	2.2	0.2
1992	52.2	18.9	78.2	110.1	93.2	49.3	18.8	6.4	2.2	0.3
1991	53.3	19.1	78.4	111.5	93.6	49.7	18.5	6.5	2.2	0.3
1990	54.6	18.1	78.3	113.2	96.1	50.9	19.2	6.5	2.2	0.3
1989	53.3	16.7	75.9	110.8	93.0	49.1	18.7	6.3	2.1	0.4
1988	52.2	14.8	73.7	108.3	91.2	47.6	18.1	6.1	2.1	0.3
1987	51.6	13.9	72.8	107.0	89.5	46.2	17.3	5.9	2.0	0.3
1986	51.7	13.8	73.3	107.0	88.7	44.4	16.6	5.7	2.0	0.3
1985	52.6	14.0	74.7	109.9	89.5	44.8	16.3	5.6	1.9	0.3
1984[4]	51.8	14.0	74.3	108.8	87.9	43.5	16.0	5.3	1.9	0.3
1983[4]	52.0	14.4	76.3	110.2	86.8	42.6	15.5	5.3	1.8	0.3
1982[4]	53.1	14.9	80.1	114.2	87.5	41.7	15.6	5.3	1.9	0.3
1981[4]	52.9	15.0	81.7	115.8	85.8	40.3	15.0	5.2	1.8	0.3
1980[4]	53.4	15.4	84.9	119.4	87.8	39.7	15.0	5.1	1.8	0.3
Black										
1993	78.3	56.6	153.8	136.0	95.3	56.6	27.7	13.5	6.4	1.3
1992	81.0	57.4	158.0	140.1	96.8	56.9	28.4	13.9	6.2	1.4
1991	83.4	58.0	158.5	143.3	100.1	58.8	29.4	14.2	6.7	1.4
1990	84.9	55.2	158.2	144.9	103.2	60.4	31.1	15.0	7.1	1.4
1989	84.1	52.9	153.4	143.5	101.4	59.9	31.1	14.9	6.9	2.7
1988	80.7	48.1	144.1	137.9	100.0	58.0	30.6	14.3	6.9	1.4
1987	78.3	44.6	136.1	133.9	97.4	58.0	30.0	13.8	6.6	1.3
1986	77.2	42.6	131.4	131.6	97.4	58.0	29.1	13.5	6.7	1.3
1985	77.2	41.8	129.5	132.7	97.3	59.4	29.5	13.3	6.5	1.2
1984[4]	76.7	40.9	128.0	132.2	98.3	58.4	29.3	13.3	6.1	1.2
1983[4]	77.2	40.7	129.1	134.4	99.0	59.6	29.6	13.5	6.0	1.2
1982[4]	79.5	40.3	133.4	141.2	103.6	61.1	29.6	13.9	6.0	1.2
1981[4]	80.4	38.9	138.4	145.6	104.3	61.3	29.7	13.3	5.7	1.2
1980[4]	83.0	40.1	145.3	152.8	109.6	62.0	31.2	13.6	5.9	1.1

[1]Rates computed by relating total births, regardless of age of father, to men aged 15–54 years.
[2]Rates computed by relating births of fathers under 20 years of age to men aged 15–19 years.
[3]Includes races other than white and black.
[4]Based on 100 percent of births in selected States and on a 50-percent sample of births in all other States; see Technical notes.

Table 18. Live births by educational attainment of mother, by age and race of mother: United States, 1993

Age and race of mother	Total	Years of school completed by mother					
		0–8 years	9–11 years	12 years	13–15 years	16 years or more	Not stated
All races[1]							
All ages	4,000,240	251,186	665,202	1,412,346	842,236	768,774	60,496
Under 15 years	12,554	9,548	2,474	–	–	–	532
15–19 years	501,093	50,408	268,203	152,906	21,103	–	8,473
15 years	30,074	10,360	18,760	–	–	–	954
16 years	61,960	9,137	50,042	1,642	–	–	1,139
17 years	98,501	8,904	74,336	13,418	245	–	1,598
18 years	138,313	10,143	67,779	54,632	3,629	–	2,130
19 years	172,245	11,864	57,286	83,214	17,229	–	2,652
20–24 years	1,038,127	69,217	212,274	475,118	220,777	46,014	14,727
25–29 years	1,128,862	57,377	106,389	411,441	288,649	248,957	16,049
30–34 years	901,151	39,560	53,651	265,208	217,274	312,174	13,284
35–39 years	357,053	19,591	18,805	93,360	81,709	137,615	5,973
40 years and over	61,400	5,485	3,406	14,313	12,724	24,014	1,458
White							
All ages	3,149,833	212,805	471,380	1,088,229	670,736	665,114	41,569
Under 15 years	5,755	4,384	1,123	–	–	–	248
15–19 years	341,817	40,129	176,900	105,362	14,081	–	5,345
15 years	16,656	6,204	9,953	–	–	–	499
16 years	38,721	6,708	30,282	1,034	–	–	697
17 years	65,932	7,482	48,409	8,860	178	–	1,003
18 years	96,747	8,980	46,960	37,044	2,365	–	1,398
19 years	123,761	10,755	41,296	58,424	11,538	–	1,748
20–24 years	790,154	62,134	159,279	355,785	165,868	37,158	9,930
25–29 years	920,772	50,939	80,693	328,056	235,018	214,757	11,309
30–34 years	749,446	34,398	38,465	214,891	178,961	273,228	9,503
35–39 years	292,693	16,568	12,695	73,386	66,525	119,281	4,238
40 years and over	49,196	4,253	2,225	10,749	10,283	20,690	996
Black							
All ages	658,875	22,960	169,220	266,769	133,909	52,799	13,218
Under 15 years	6,417	4,897	1,259	–	–	–	261
15–19 years	143,153	8,806	82,999	42,482	6,225	–	2,641
15 years	12,389	3,862	8,122	–	–	–	405
16 years	21,319	2,206	18,164	560	–	–	389
17 years	29,448	1,146	23,653	4,093	57	–	499
18 years	37,221	874	18,792	15,826	1,111	–	618
19 years	42,776	718	14,268	22,003	5,057	–	730
20–24 years	208,149	3,357	46,278	102,598	46,163	6,220	3,533
25–29 years	151,566	2,463	21,028	66,360	41,133	17,456	3,126
30–34 years	100,966	1,933	12,041	37,996	27,983	18,591	2,422
35–39 years	41,348	1,136	4,739	14,798	10,749	8,913	1,013
40 years and over	7,276	368	876	2,535	1,656	1,619	222

[1] Includes races other than white and black.

Table 19. Number of live births and percent distribution by weight gain of mother during pregnancy and median weight gain, according to period of gestation and race of mother: Total of 49 reporting States and the District of Columbia, 1993

Period of gestation[1] and race of mother	All births	Weight gain during pregnancy									Median weight gain
		Less than 16 pounds	16–20 pounds	21–25 pounds	26–30 pounds	31–35 pounds	36–40 pounds	41–45 pounds	46 pounds or more	Not stated	
All gestational periods[2]	Number										Pounds
All races[3]	3,414,916	311,804	332,434	450,459	597,919	444,527	385,132	200,125	322,032	370,484	. . .
White	2,671,361	213,972	244,629	356,095	484,623	370,742	316,897	165,971	258,014	260,418	. . .
Black	613,902	85,391	73,223	76,427	90,721	58,304	55,704	28,072	55,469	90,591	. . .
Under 37 weeks											
All races[3]	379,304	57,851	48,558	50,792	56,858	36,398	31,108	15,685	27,834	54,220	. . .
White	251,689	32,398	30,678	35,202	40,416	27,244	22,659	11,728	20,018	31,346	. . .
Black	113,774	23,442	15,969	13,693	14,394	7,890	7,473	3,513	7,101	20,299	. . .
37–39 weeks											
All races[3]	1,481,599	131,989	148,298	205,788	270,027	197,087	165,625	83,536	129,362	149,887	. . .
White	1,155,327	91,564	109,084	162,129	218,043	162,877	135,032	68,417	102,472	105,709	. . .
Black	265,726	34,771	32,203	34,793	41,113	26,710	24,803	12,443	23,300	35,590	. . .
40 weeks and over											
All races[3]	1,540,288	121,040	134,852	193,130	270,031	210,448	187,832	100,614	164,355	157,986	. . .
White	1,255,003	89,465	104,406	158,210	225,387	180,151	158,746	85,589	135,166	117,883	. . .
Black	230,897	26,866	24,823	27,799	35,054	23,614	23,352	12,075	24,972	32,342	. . .
All gestation periods[2]	Percent distribution										
All races[3]	100.0	10.2	10.9	14.8	19.6	14.6	12.7	6.6	10.6	. . .	30.4
White	100.0	8.9	10.1	14.8	20.1	15.4	13.1	6.9	10.7	. . .	30.6
Black	100.0	16.3	14.0	14.6	17.3	11.1	10.6	5.4	10.6	. . .	28.5
Under 37 weeks											
All races[3]	100.0	17.8	14.9	15.6	17.5	11.2	9.6	4.8	8.6	. . .	26.7
White	100.0	14.7	13.9	16.0	18.3	12.4	10.3	5.3	9.1	. . .	28.2
Black	100.0	25.1	17.1	14.6	15.4	8.4	8.0	3.8	7.6	. . .	25.0
37–39 weeks											
All races[3]	100.0	9.9	11.1	15.5	20.3	14.8	12.4	6.3	9.7	. . .	30.3
White	100.0	8.7	10.4	15.4	20.8	15.5	12.9	6.5	9.8	. . .	30.5
Black	100.0	15.1	14.0	15.1	17.9	11.6	10.8	5.4	10.1	. . .	28.7
40 weeks and over											
All races[3]	100.0	8.8	9.8	14.0	19.5	15.2	13.6	7.3	11.9	. . .	30.8
White	100.0	7.9	9.2	13.9	19.8	15.8	14.0	7.5	11.9	. . .	30.9
Black	100.0	13.5	12.5	14.0	17.7	11.9	11.8	6.1	12.6	. . .	30.2

[1]Expressed in completed weeks.
[2]Includes births with period of gestation not stated.
[3]Includes races other than white and black.

NOTE: Excludes data for California, which did not require reporting of weight gain during pregnancy.

Table 20. Percent low birthweight by weight gain during pregnancy, period of gestation, and race of mother: Total of 49 reporting States and the District of Columbia, 1993

[Low birthweight is defined as weight of less than 2,500 grams (5lb 8 oz)]

Period of gestation[1] and race of mother	Total	Weight gain during pregnancy								
		Less than 16 pounds	16–20 pounds	21–25 pounds	26–30 pounds	31–35 pounds	36–40 pounds	41–45 pounds	46 pounds or more	Not stated
All gestational periods[2]										
All races[3]	7.4	15.2	10.9	7.5	5.7	4.6	4.3	4.2	4.7	11.0
White	6.1	12.3	9.2	6.5	4.9	4.1	3.8	3.9	4.2	8.7
Black	13.4	23.2	16.8	12.7	10.1	8.3	7.7	6.7	6.9	18.2
Under 37 weeks										
All races[3]	42.6	57.7	48.1	40.9	35.7	32.8	32.0	32.1	33.0	50.8
White	40.7	56.4	47.4	39.9	34.9	32.2	31.4	32.6	33.4	48.2
Black	47.5	60.4	50.3	44.4	38.5	36.0	34.5	31.8	32.9	55.7
37–39 weeks										
All races[3]	4.5	7.9	6.5	4.7	3.8	3.3	3.0	3.1	3.4	5.7
White	3.8	6.5	5.5	4.1	3.3	2.9	2.7	2.8	3.1	4.6
Black	7.5	11.7	9.7	7.5	6.4	5.5	5.0	4.5	4.7	9.0
40 weeks and over										
All races[3]	1.6	3.1	2.4	1.7	1.3	1.0	0.9	0.9	0.9	2.3
White	1.2	2.4	1.9	1.4	1.1	0.9	0.8	0.7	0.8	1.7
Black	3.3	5.6	4.6	3.5	2.7	2.1	2.1	1.8	1.7	4.4

[1]Expressed in completed weeks.
[2]Includes births with period of gestation not stated.
[3]Includes races other than white and black.

NOTE: Excludes data for California, which did not require reporting of weight gain during pregnancy.

Table 21. Number of live births and percent distribution by weight gain of mother during pregnancy and median weight gain, according to period of gestation, Hispanic origin of mother, and race of mother for mothers of non-Hispanic origin: Total of 49 reporting States and the District of Columbia, 1993

Period of gestation[1] and race of mother	All births	Weight gain									
		Total	Less than 16 pounds	16–20 pounds	21–25 pounds	26–30 pounds	31–35 pounds	36–40 pounds	41–45 pounds	46 pounds or more	Median weight gain
All gestational periods[2]	Number	Percent distribution									Pounds
All origins[3]	3,414,916	100.0	10.2	10.9	14.8	19.6	14.6	12.7	6.6	10.6	30.4
Hispanic	392,105	100.0	12.3	13.2	15.5	19.1	13.4	11.4	6.0	9.3	29.7
Mexican	221,828	100.0	13.3	13.9	15.7	18.8	13.2	10.8	5.7	8.6	28.6
Puerto Rican	55,940	100.0	12.0	12.5	14.7	18.1	13.1	11.9	6.4	11.2	30.2
Cuban	11,052	100.0	7.0	9.4	13.7	22.2	14.8	14.0	7.2	11.8	30.8
Central and South American	62,632	100.0	10.4	12.8	15.6	21.0	14.0	12.1	5.7	8.4	30.1
Other and unknown Hispanic	40,653	100.0	12.0	11.8	15.3	18.0	13.8	11.8	6.7	10.7	30.1
Non-Hispanic[4]	2,979,177	100.0	10.0	10.7	14.7	19.7	14.7	12.8	6.6	10.7	30.5
White	2,258,705	100.0	8.4	9.7	14.7	20.2	15.7	13.4	7.0	10.9	30.7
Black	597,776	100.0	16.4	14.0	14.6	17.3	11.1	10.6	5.4	10.6	28.5
Under 37 weeks											
All origins[3]	379,304	100.0	17.8	14.9	15.6	17.5	11.2	9.6	4.8	8.6	26.7
Hispanic	44,657	100.0	18.5	16.1	15.8	17.6	10.8	9.2	4.4	7.6	25.9
Mexican	24,726	100.0	18.9	16.2	16.2	17.1	10.9	8.9	4.3	7.5	25.8
Puerto Rican	7,401	100.0	20.3	16.2	14.6	17.1	10.4	9.2	4.5	7.7	25.8
Cuban	1,171	100.0	13.3	13.9	16.5	19.5	12.2	9.3	5.5	9.7	29.5
Central and South American	6,537	100.0	16.6	16.1	15.8	19.8	11.2	9.7	3.8	7.0	26.6
Other and unknown Hispanic	4,822	100.0	18.1	15.9	15.8	16.7	10.5	9.7	5.3	8.1	26.1
Non-Hispanic[4]	330,291	100.0	17.7	14.8	15.6	17.5	11.2	9.6	4.9	8.7	26.8
White	205,697	100.0	14.0	13.6	16.0	18.5	12.6	10.5	5.5	9.4	28.6
Black	111,530	100.0	25.1	17.1	14.6	15.4	8.4	8.0	3.7	7.6	25.0
37–39 weeks											
All origins[3]	1,481,599	100.0	9.9	11.1	15.5	20.3	14.8	12.4	6.3	9.7	30.3
Hispanic	173,218	100.0	12.0	13.4	16.0	19.5	13.7	11.2	5.6	8.6	29.2
Mexican	97,273	100.0	13.1	14.2	16.3	19.2	13.4	10.5	5.4	7.9	28.3
Puerto Rican	24,819	100.0	11.5	12.7	15.0	18.6	13.5	11.9	6.2	10.5	30.2
Cuban	5,122	100.0	6.5	9.4	14.0	23.1	14.5	14.2	6.7	11.6	30.8
Central and South American	27,849	100.0	10.4	12.9	16.2	21.3	14.1	11.8	5.4	7.9	30.0
Other and unknown Hispanic	18,155	100.0	11.8	12.1	16.1	18.0	14.2	11.9	6.4	9.6	29.9
Non-Hispanic[4]	1,290,604	100.0	9.7	10.9	15.4	20.4	14.9	12.6	6.3	9.9	30.4
White	974,425	100.0	8.2	10.0	15.4	21.0	15.8	13.1	6.6	9.9	30.6
Black	258,756	100.0	15.2	14.0	15.1	17.8	11.6	10.8	5.4	10.1	28.7
40 weeks and over											
All origins[3]	1,540,288	100.0	8.8	9.8	14.0	19.5	15.2	13.6	7.3	11.9	30.8
Hispanic	172,236	100.0	10.9	12.2	14.8	19.0	13.9	12.0	6.7	10.5	30.3
Mexican	98,984	100.0	12.1	13.2	15.0	18.7	13.5	11.4	6.4	9.7	30.0
Puerto Rican	23,100	100.0	10.1	11.2	14.3	18.0	13.6	12.6	7.2	13.0	30.6
Cuban	4,748	100.0	6.0	8.3	12.7	21.9	15.7	14.9	8.2	12.4	31.6
Central and South American	27,987	100.0	8.9	11.9	15.1	21.0	14.6	12.8	6.4	9.4	30.4
Other and unknown Hispanic	17,417	100.0	10.5	10.5	14.3	18.3	14.3	12.2	7.3	12.5	30.6
Non-Hispanic[4]	1,347,605	100.0	8.5	9.5	13.9	19.6	15.4	13.8	7.3	12.1	30.9
White	1,071,926	100.0	7.5	8.8	13.8	19.9	16.1	14.2	7.6	12.1	31.0
Black	224,237	100.0	13.6	12.5	14.0	17.6	11.8	11.8	6.1	12.6	30.2

[1]Expressed in completed weeks.
[2]Includes births with period of gestation not stated.
[3]Includes origin not stated.
[4]Includes races other than white and black.

NOTE: Excludes data for California, which did not require reporting of weight gain during pregnancy.

Table 22. Percent low birthweight by weight gain of mother during pregnancy and Hispanic origin of mother, and by race of mother for mothers of non-Hispanic origin: Total of 49 reporting States and the District of Columbia, 1993

[Low birthweight is defined as weight of less than 2,500 grams (5 lb 8 oz)]

Origin of mother	Total	Weight gain during pregnancy								
		Less than 16 pounds	16–20 pounds	21–25 pounds	26–30 pounds	31–35 pounds	36–40 pounds	41–45 pounds	46 pounds or more	Not stated
All origins[1]	7.4	15.2	10.9	7.5	5.7	4.6	4.3	4.2	4.7	11.0
Hispanic	6.8	12.1	8.6	6.4	5.3	4.5	4.0	3.9	4.4	8.7
Mexican	6.2	10.4	7.6	5.7	4.8	4.0	3.7	3.7	4.2	7.8
Puerto Rican	9.3	18.0	11.9	8.4	7.6	5.7	5.4	4.5	4.8	12.6
Cuban	6.2	16.0	9.0	6.9	4.8	4.8	3.3	3.9	5.0	11.6
Central and South American	6.1	11.8	7.8	6.0	4.8	4.4	3.6	3.2	4.5	7.7
Other and unknown Hispanic	7.8	13.0	11.2	7.6	6.0	5.2	4.2	4.9	4.3	11.0
Non-Hispanic[2]	7.5	15.7	11.2	7.7	5.8	4.6	4.4	4.3	4.7	11.7
White	6.0	12.4	9.4	6.5	4.9	4.0	3.7	3.9	4.2	8.7
Black	13.5	23.3	17.0	12.7	10.2	8.3	7.8	6.8	7.0	18.3

[1]Includes origin not stated.
[2]Includes races other than white and black.

NOTE: Excludes data for California, which did not require reporting of weight gain during pregnancy.

Table 23. Percent of births with selected medical or health characteristics, by specified race of mother: United States, 1993

Characteristic	All races	White	Black	American Indian[1]	Asian or Pacific Islander					
					Total	Chinese	Japanese	Hawaiian	Filipino	Other
Mother										
Prenatal care beginning in the first trimester	78.9	81.8	66.0	63.4	77.6	84.6	87.2	70.6	79.3	74.4
Third trimester or no prenatal care	4.8	3.9	9.0	10.3	4.6	2.9	2.8	6.7	4.0	5.4
Smoker[2]	15.8	16.8	12.7	21.6	4.3	1.1	6.7	17.2	4.3	3.2
Drinker[3]	2.1	1.9	3.1	6.0	0.6	0.4	1.3	2.3	0.5	0.5
Weight gain of less than 16 lb[4]	10.2	8.9	16.3	14.5	10.0	7.2	9.1	8.1	7.7	11.6
Cesarean delivery rate	21.8	21.9	22.0	17.9	19.3	20.2	18.7	17.9	23.7	17.7
Infant										
Preterm births[5]	11.0	9.5	18.5	12.2	10.0	7.2	8.0	11.5	11.2	10.6
Birthweight										
Very low birthweight[6]	1.3	1.0	3.0	1.1	0.9	0.6	0.7	1.1	0.9	0.9
Low birthweight[7]	7.2	6.0	13.3	6.4	6.6	4.9	6.5	6.8	7.0	6.9
4,000 grams or more[8]	10.5	11.8	5.2	12.5	6.0	6.3	5.7	9.2	6.3	5.6
5-minute Apgar score of less than 7[9]	1.4	1.2	2.5	1.4	1.0	0.7	0.7	1.1	1.2	1.1
1-minute Apgar score of less than 7[9]	8.4	7.9	10.8	8.5	6.6	5.3	5.2	7.4	7.2	6.8

[1]Includes births to Aleuts and Eskimos.
[2]Excludes data for California, Indiana, New York, and South Dakota, which did not require reporting of tobacco use.
[3]Excludes data for California, New York, and South Dakota, which did not require reporting of alcohol use.
[4]Excludes data for California, which did not report weight gain on the birth certificate.
[5]Born prior to 37 completed weeks of gestation.
[6]Birthweight of less than 1,500 grams (3 lb 4 oz).
[7]Birthweight of less than 2,500 grams (5 lb 8 oz).
[8]Equivalent to 8 lb 14 oz or more.
[9]Excludes data for California and Texas, which did not report either 1- or 5-minute Apgar score on the birth certificate.

Table 24. Percent of births with selected medical or health characteristics, by Hispanic origin of mother and by race of mother for mothers of non-Hispanic origin: United States, 1993

Characteristic	Origin of mother									
		Hispanic						Non-Hispanic		
	All origins[1]	Total	Mexican	Puerto Rican	Cuban	Central and South American	Other and unknown Hispanic	Total[2]	White	Black
Mother										
Prenatal care beginning in the first trimester	78.9	66.6	64.8	70.0	88.9	68.7	70.0	81.3	85.6	66.1
Third trimester or no prenatal care	4.8	8.8	9.7	7.1	1.8	7.3	7.0	4.0	2.7	9.0
Smoker[3]	15.8	5.0	3.7	11.2	5.0	2.3	9.3	17.1	18.6	12.7
Drinker[4]	2.1	1.0	0.8	1.4	0.6	0.6	1.7	2.2	2.0	3.1
Weight gain of less than 16 lb[5]	10.2	12.3	13.3	12.0	7.0	10.4	12.0	10.0	8.4	16.4
Cesarean delivery rate	21.8	20.9	20.3	21.4	31.6	21.8	21.9	22.0	22.2	22.0
Infant										
Preterm births[6]	11.0	11.0	10.7	13.3	10.4	10.7	11.7	11.0	9.1	18.6
Birthweight										
Very low birthweight[7]	1.3	1.1	1.0	1.7	1.2	1.0	1.2	1.4	1.0	3.0
Low birthweight[8]	7.2	6.2	5.8	9.2	6.2	5.9	7.5	7.4	5.9	13.4
4,000 grams or more[9]	10.5	9.1	9.5	7.1	10.6	9.2	7.7	10.7	12.4	5.2
5-minute Apgar scores of less than 7[10]	1.4	1.2	1.2	1.4	0.7	1.2	1.2	1.5	1.2	2.6
1-minute Apgar scores of less than 7[10]	8.4	7.2	7.8	7.2	4.6	6.3	8.0	8.5	7.9	10.8

[1] Includes origin not stated.
[2] Includes races other than white and black.
[3] Excludes data for California, Indiana, New York, and South Dakota, which did not require reporting of tobacco use.
[4] Excludes data for California, New York, and South Dakota, which did not require reporting of alcohol use.
[5] Excludes data for California, which did not report weight gain on the birth certificate.
[6] Born prior to 37 completed weeks of gestation.
[7] Birthweight of less than 1,500 grams (3 lb 4 oz).
[8] Birthweight of less than 2,500 grams (5 lb 8 oz).
[9] Equivalent to 8 lb 14 oz or more.
[10] Excludes data for California and Texas, which did not report either 1- or 5-minute Apgar score on the birth certificate.

Table 25. Live births to mothers with selected medical risk factors and rates by age of mother, by race of mother: United States, 1993

[Rates are number of live births with specified medical risk factor per 1,000 live births in specified group]

Medical risk factor and race of mother	All births[1]	Medical risk factor reported	Age of mother: All ages	Under 20 years	20–24 years	25–29 years	30–34 years	35–39 years	40–49 years	Not stated
All races[2]	Number		Rate							Number
Anemia	4,000,240	73,424	18.7	27.4	22.4	16.2	14.4	14.6	15.2	70,408
Cardiac disease	4,000,240	16,735	4.3	2.6	3.1	4.3	5.5	6.1	7.3	70,408
Acute or chronic lung disease	4,000,240	18,750	4.8	6.2	5.0	4.2	4.3	4.7	6.0	70,408
Diabetes	4,000,240	102,234	26.0	8.5	16.5	25.8	34.8	49.8	69.6	70,408
Genital herpes[3]	3,678,169	30,389	8.4	5.8	7.5	8.2	9.6	11.7	11.8	65,218
Hydramnios/Oligohydramnios[4]	3,847,418	34,690	9.2	9.9	9.2	8.6	8.8	10.0	13.1	62,480
Hemoglobinopathy	4,000,240	2,521	0.6	0.9	0.7	0.6	0.5	0.5	0.5	70,408
Hypertension, chronic	4,000,240	26,518	6.7	2.8	4.2	6.0	8.5	14.7	25.8	70,408
Hypertension, pregnancy-associated	4,000,240	116,901	29.7	34.2	29.8	28.7	27.2	31.5	37.7	70,408
Eclampsia	4,000,240	13,094	3.3	5.1	3.5	2.8	2.7	3.2	4.7	70,408
Incompetent cervix	4,000,240	8,935	2.3	1.0	1.6	2.2	3.2	4.0	4.3	70,408
Previous infant 4,000 grams or more	4,000,240	40,902	10.4	1.6	6.5	11.2	15.1	18.1	20.9	70,408
Previous preterm or small-for-gestational-age infant	4,000,240	45,781	11.6	5.6	11.5	11.8	13.1	15.7	15.9	70,408
Renal disease	4,000,240	8,986	2.3	2.8	2.7	2.2	1.9	1.9	1.9	70,408
Rh sensitization[5]	3,962,834	23,906	6.1	4.6	5.7	6.4	6.8	6.8	6.7	71,391
Uterine bleeding[3]	3,678,169	28,360	7.8	5.9	7.0	8.0	8.9	9.6	10.9	65,218
White										
Anemia	3,149,833	47,867	15.5	22.6	18.4	13.6	12.5	12.7	12.8	54,644
Cardiac disease	3,149,833	14,039	4.5	2.5	3.2	4.6	5.8	6.5	7.7	54,644
Acute or chronic lung disease	3,149,833	14,138	4.6	5.9	4.7	4.1	4.2	4.6	6.0	54,644
Diabetes	3,149,833	80,515	26.0	9.3	17.1	25.4	33.1	47.1	65.4	54,644
Genital herpes[3]	2,877,622	24,463	8.7	4.8	7.0	8.4	10.4	12.9	13.4	50,201
Hydramnios/Oligohydramnios[4]	3,017,108	26,267	8.8	9.4	8.9	8.3	8.5	9.8	12.4	47,965
Hemoglobinopathy	3,149,833	800	0.3	0.2	0.2	0.3	0.3	0.3	*	54,644
Hypertension, chronic	3,149,833	18,189	5.9	2.2	3.8	5.3	7.2	11.9	20.5	54,644
Hypertension, pregnancy-associated	3,149,833	94,094	30.4	35.1	31.2	29.6	27.4	31.4	37.3	54,644
Eclampsia	3,149,833	9,504	3.1	4.5	3.3	2.8	2.5	3.0	4.3	54,644
Incompetent cervix	3,149,833	6,670	2.2	1.0	1.4	1.9	3.0	3.9	4.6	54,644
Previous infant 4,000 grams or more	3,149,833	36,773	11.9	1.8	7.4	12.4	16.7	20.0	23.5	54,644
Previous preterm or small-for-gestational-age infant	3,149,833	34,289	11.1	4.8	10.5	11.2	12.5	15.4	15.3	54,644
Renal disease	3,149,833	7,282	2.4	3.1	2.8	2.2	1.9	1.9	1.8	54,644
Rh sensitization[5]	3,116,798	21,664	7.1	5.5	6.7	7.3	7.7	7.7	7.6	55,540
Uterine bleeding[3]	2,877,622	23,113	8.2	6.2	7.3	8.2	9.1	9.8	11.4	50,201
Black										
Anemia	658,875	21,053	32.6	36.7	35.7	29.9	27.0	26.3	28.8	13,066
Cardiac disease	658,875	2,202	3.4	2.8	3.0	3.4	4.3	4.9	6.9	13,066
Acute or chronic lung disease	658,875	3,999	6.2	7.3	6.2	5.3	5.9	6.1	7.5	13,066
Diabetes	658,875	14,733	22.8	6.6	14.0	25.8	41.1	59.3	86.2	13,066
Genital herpes[3]	617,181	5,142	8.5	8.3	10.0	8.3	7.0	6.9	5.0	12,396
Hydramnios/Oligohydramnios[4]	642,358	6,926	11.0	10.9	10.3	10.9	11.4	12.8	17.7	11,970
Hemoglobinopathy	658,875	1,585	2.5	2.6	2.6	2.4	2.4	1.7	*	13,066
Hypertension, chronic	658,875	7,405	11.5	4.3	6.2	10.9	19.5	37.3	64.4	13,066
Hypertension, pregnancy-associated	658,875	18,995	29.4	32.3	25.9	27.7	30.8	36.2	47.8	13,066
Eclampsia	658,875	3,096	4.8	6.4	4.5	3.7	4.4	5.2	7.2	13,066
Incompetent cervix	658,875	2,024	3.1	1.2	2.3	4.0	5.5	5.3	3.7	13,066
Previous infant 4,000 grams or more	658,875	2,657	4.1	1.0	3.2	5.1	6.9	8.3	9.7	13,066
Previous preterm or small-for-gestational-age infant	658,875	9,686	15.0	7.6	15.3	17.2	19.7	19.6	21.9	13,066
Renal disease	658,875	1,385	2.1	2.1	2.4	1.9	2.0	2.2	*	13,066
Rh sensitization[5]	655,637	1,893	2.9	2.6	2.9	3.1	3.2	3.2	3.7	13,143
Uterine bleeding[3]	617,181	4,048	6.7	5.3	6.0	7.4	8.1	8.9	8.7	12,396

[1]Total number of births to residents of areas reporting specified medical risk factor.
[2]Includes races other than white and black.
[3]Texas does not report this risk factor.
[4]New York City (but not New York State) reports this risk factor.
[5]Kansas does not report this risk factor.

Table 26. Number and rate of live births to mothers with selected medical risk factors, complications of labor, and obstetric procedures, by specified race of mother: United States, 1993

[Rates are number of live births with specified risk factors, complications, or procedures per 1,000 live births in specified group]

Medical risk factor, complication, and obstetric procedure	All races	White	Black	American Indian[1]	Asian or Pacific Islander					
					Total	Chinese	Japanese	Hawaiian	Filipino	Other
Medical risk factors					Number					
Anemia	73,424	47,867	21,053	2,398	2,106	221	85	147	332	1,321
Diabetes	102,234	80,515	14,733	1,682	5,304	1,016	270	158	1,200	2,660
Hypertension, pregnancy-associated	116,901	94,094	18,995	1,526	2,286	241	113	137	676	1,119
Uterine bleeding[2]	28,360	23,113	4,048	334	865	157	44	24	174	466
Complications of labor and/or delivery										
Meconium,moderate/heavy	227,646	164,229	52,625	2,333	8,459	1,268	356	336	1,788	4,711
Premature rupture of membrane	122,386	93,310	23,429	1,663	3,984	725	186	147	779	2,147
Dysfunctional labor	117,931	96,240	16,604	1,231	3,856	779	183	92	715	2,087
Breech/Malpresentation	148,882	123,738	18,664	1,361	5,119	912	308	209	1,041	2,649
Cephalopelvic disproportion[3]	110,076	89,573	15,002	885	4,616	796	258	202	1,211	2,149
Fetal distress[3]	150,821	111,978	32,687	1,395	4,761	730	249	127	1,027	2,628
Obstetric procedures										
Amniocentesis	124,511	106,561	11,298	830	5,822	1,523	641	142	1,262	2,254
Electronic fetal monitoring	3,120,636	2,472,079	510,864	29,374	108,319	18,030	6,111	4,311	20,567	59,300
Induction of labor	527,756	445,892	63,583	5,002	13,279	2,048	844	559	2,428	7,400
Ultrasound	2,375,698	1,919,655	353,322	22,248	80,473	13,542	5,020	3,065	15,783	43,063
Stimulation of labor	544,105	440,431	78,947	5,083	19,644	3,487	1,084	779	3,404	10,890
Medical risk factors					Rate					
Anemia	18.7	15.5	32.6	63.3	13.9	8.7	9.9	25.4	11.3	16.1
Diabetes	26.0	26.0	22.8	44.4	35.1	40.1	31.3	27.3	40.8	32.5
Hypertension, pregnancy-associated	29.7	30.4	29.4	40.3	15.1	9.5	13.1	23.6	23.0	13.7
Uterine bleeding[2]	7.8	8.2	6.7	9.0	6.0	6.5	5.2	4.2	6.1	6.1
Complications of labor and/or delivery										
Meconium,moderate/heavy	57.8	52.9	81.2	61.6	56.0	50.1	41.2	57.9	60.7	57.6
Premature rupture of membrane	31.1	30.1	36.2	43.9	26.4	28.6	21.5	25.3	26.5	26.2
Dysfunctional labor	29.9	31.0	25.6	32.5	25.5	30.8	21.2	15.9	24.3	25.5
Breech/Malpresentation	37.8	39.9	28.8	35.9	33.9	36.0	35.7	36.0	35.4	32.4
Cephalopelvic disproportion[3]	30.4	31.7	24.8	23.8	32.2	32.9	30.5	35.1	42.4	28.1
Fetal distress[3]	41.7	39.6	53.9	37.5	33.2	30.2	29.5	22.1	36.0	34.3
Obstetric procedures										
Amniocentesis	31.5	34.3	17.4	21.8	38.5	60.1	74.2	24.5	42.8	27.5
Electronic fetal monitoring	789.9	794.6	785.9	772.2	715.8	711.7	707.1	743.7	697.0	722.8
Induction of labor	133.6	143.3	97.8	131.5	87.7	80.8	97.7	96.4	82.3	90.2
Ultrasound	601.3	617.0	543.6	584.9	531.8	534.6	580.9	528.7	534.9	524.9
Stimulation of labor	137.7	141.6	121.5	133.6	129.8	137.6	125.4	134.4	115.4	132.7

[1]Includes births to Aleuts and Eskimos.
[2]Texas does not report this risk factor.
[3]Texas does not report this complication.

Table 27. Number and rate of live births to mothers with selected medical risk factors, complications of labor, and obstetric procedures, by Hispanic origin of mother and by race of mother for mothers of non-Hispanic origin: United States, 1993

[Rates are number of live births with specified risk factors, complications, or procedures per 1,000 live births in specified group]

Medical risk factor, complication, and obstetric procedure	All origins[1]	Origin of mother: Hispanic: Total	Hispanic: Mexican	Hispanic: Puerto Rican	Hispanic: Cuban	Hispanic: Central and South American	Hispanic: Other and unknown Hispanic	Non-Hispanic: Total[2]	Non-Hispanic: White	Non-Hispanic: Black
Medical risk factors					Number					
Anemia	73,424	11,444	7,236	1,484	197	1,132	1,395	60,963	36,273	20,463
Diabetes	102,234	15,520	9,909	1,763	328	2,313	1,207	85,178	64,226	14,259
Hypertension, pregnancy-associated	116,901	12,316	8,139	1,103	243	1,447	1,384	103,177	80,994	18,592
Uterine bleeding[3]	28,360	2,417	1,368	338	43	399	269	25,397	20,330	3,944
Complications of labor and/or delivery										
Meconium, moderate/heavy	227,646	37,765	24,424	3,578	580	6,217	2,966	186,740	125,358	51,180
Premature rupture of membrane	122,386	13,910	7,708	2,124	300	2,400	1,378	106,240	78,197	22,721
Dysfunctional labor	117,931	17,812	11,174	1,784	607	2,558	1,689	97,963	77,146	16,008
Breech/Malpresentation	148,882	19,803	13,125	1,851	475	2,735	1,617	127,077	102,799	18,142
Cephalopelvic disproportion[4]	110,076	11,986	7,463	1,259	350	1,861	1,053	96,738	76,973	14,593
Fetal distress[4]	150,821	18,105	11,161	2,013	339	3,212	1,380	130,702	92,972	31,932
Obstetric procedures										
Amniocentesis	124,511	9,726	5,196	1,191	307	1,835	1,197	111,347	94,038	10,959
Electronic fetal monitoring	3,120,636	459,264	300,368	46,348	9,063	66,086	37,399	2,622,934	1,995,147	497,054
Induction of labor	527,756	52,442	34,080	5,341	1,192	6,748	5,081	468,624	389,442	61,812
Ultrasound	2,375,698	293,960	190,455	32,253	6,012	38,753	26,487	2,049,549	1,607,239	344,628
Stimulation of labor	544,105	72,646	47,057	7,802	1,312	9,619	6,856	464,039	363,961	76,596
Medical risk factors					Rate					
Anemia	18.7	17.8	16.5	26.5	16.6	12.5	29.5	18.8	14.9	32.5
Diabetes	26.0	24.1	22.6	31.5	27.7	25.5	25.5	26.3	26.4	22.7
Hypertension, pregnancy-associated	29.7	19.1	18.6	19.7	20.5	16.0	29.2	31.9	33.3	29.6
Uterine bleeding[3]	7.8	4.7	4.2	6.1	3.7	4.7	7.2	8.3	8.9	6.7
Complications of labor and/or delivery										
Meconium, moderate/heavy	57.8	58.3	55.3	63.7	48.9	68.5	62.3	57.6	51.5	81.1
Premature rupture of membrane	31.1	21.5	17.5	37.8	25.3	26.5	29.0	32.8	32.1	36.0
Dysfunctional labor	29.9	27.5	25.3	31.8	51.2	28.2	35.5	30.2	31.7	25.4
Breech/Malpresentation	37.8	30.6	29.7	33.0	40.1	30.1	34.0	39.2	42.3	28.8
Cephalopelvic disproportion[4]	30.4	23.2	22.8	22.8	30.1	21.9	28.1	31.7	33.6	24.8
Fetal distress[4]	41.7	35.0	34.1	36.4	29.2	37.9	36.8	42.8	40.6	54.2
Obstetric procedures										
Amniocentesis	31.5	15.0	11.8	21.1	25.9	20.2	25.1	34.2	38.5	17.3
Electronic fetal monitoring	789.9	707.8	679.5	822.6	763.5	727.0	783.7	806.2	817.6	785.2
Induction of labor	133.6	80.8	77.1	94.8	100.4	74.2	106.5	144.0	159.6	97.6
Ultrasound	601.3	453.0	430.9	572.4	506.5	426.3	555.0	630.0	658.6	544.4
Stimulation of labor	137.7	112.0	106.5	138.5	110.5	105.8	143.7	142.6	149.2	121.0

[1] Includes origin not stated.
[2] Includes races other than white and black.
[3] Texas does not report this factor.
[4] Texas does not report this complication.

Table 28. Number of live births by smoking status of mother, percent smokers, and percent distribution by average number of cigarettes smoked by mothers per day, according to age and race of mother: Total of 46 reporting States and the District of Columbia, 1993

Smoking status, smoking measure, and race of mother	All ages	Age of mother								
		Under 15 years	15–19 years			20–24 years	25–29 years	30–34 years	35–39 years	40–49 years
			Total	15–17 years	18–19 years					
All races[1]						Number				
Total	3,037,856	10,135	394,036	149,751	244,285	802,304	854,571	675,239	259,327	42,244
Smoker	469,926	698	67,837	21,872	45,965	151,563	124,065	88,698	32,535	4,530
Nonsmoker	2,513,276	9,272	319,663	125,420	194,243	637,258	715,299	573,636	221,412	36,736
Not stated	54,654	165	6,536	2,459	4,077	13,483	15,207	12,905	5,380	978
White										
Total	2,380,728	4,150	258,998	90,790	168,208	599,237	699,367	568,770	215,887	34,319
Smoker	391,772	561	59,567	19,094	40,473	129,374	101,880	71,397	25,531	3,462
Nonsmoker	1,945,948	3,516	194,974	70,130	124,844	459,777	585,199	486,585	185,870	30,027
Not stated	43,008	73	4,457	1,566	2,891	10,086	12,288	10,788	4,486	830
Black										
Total	544,368	5,734	123,503	54,626	68,877	176,829	122,167	79,053	31,617	5,465
Smoker	67,923	113	6,365	2,074	4,291	18,937	19,688	15,586	6,309	925
Nonsmoker	467,400	5,537	115,340	51,774	63,566	155,126	100,253	61,986	24,709	4,449
Not stated	9,045	84	1,798	778	1,020	2,766	2,226	1,481	599	91
						Percent				
Smoker[1]	15.8	7.0	17.5	14.8	19.1	19.2	14.8	13.4	12.8	11.0
White	16.8	13.8	23.4	21.4	24.5	22.0	14.8	12.8	12.1	10.3
Black	12.7	2.0	5.2	3.9	6.3	10.9	16.4	20.1	20.3	17.2
All races[1]						Percent distribution				
Smoker	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1–5 cigarettes	22.6	40.3	29.0	32.7	27.2	22.7	21.2	20.7	19.9	19.4
6–10 cigarettes	40.1	41.2	43.1	42.9	43.2	41.7	39.5	37.8	36.1	33.3
11–15 cigarettes	6.4	3.7	4.9	4.4	5.1	6.2	6.8	7.1	6.9	7.0
16–20 cigarettes	25.7	12.7	20.1	17.6	21.3	25.1	27.1	27.9	28.8	30.4
21–30 cigarettes	3.5	*	2.1	1.6	2.3	3.0	3.7	4.3	5.4	6.0
31–40 cigarettes	1.4	*	0.7	0.6	0.7	1.2	1.5	1.9	2.7	3.5
41 cigarettes or more	0.2	*	0.1	0.1	0.1	0.2	0.2	0.2	0.3	*
White										
Smoker	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1–5 cigarettes	19.9	35.3	26.4	30.0	24.7	19.7	18.3	18.3	17.0	17.4
6–10 cigarettes	39.8	44.6	43.9	44.2	43.8	41.7	38.8	36.6	34.6	31.6
11–15 cigarettes	7.0	4.2	5.2	4.6	5.5	6.8	7.6	7.9	7.5	7.8
16–20 cigarettes	27.6	13.5	21.4	18.7	22.7	27.1	29.3	30.0	31.2	31.8
21–30 cigarettes	3.9	*	2.2	1.7	2.5	3.4	4.2	5.0	6.3	6.9
31–40 cigarettes	1.5	*	0.7	0.6	0.8	1.2	1.6	2.0	3.0	3.9
41 cigarettes or more	0.2	*	0.1	0.1	0.2	0.2	0.2	0.2	0.4	*
Black										
Smoker	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1–5 cigarettes	36.5	57.8	49.7	54.2	47.6	40.9	34.7	31.1	29.9	26.2
6–10 cigarettes	41.8	28.4	36.4	33.0	38.0	41.7	42.9	43.1	41.9	39.3
11–15 cigarettes	3.1	*	2.3	2.2	2.3	2.4	3.1	3.9	4.4	4.4
16–20 cigarettes	16.0	*	10.2	9.3	10.6	13.2	16.7	18.9	19.7	25.1
21–30 cigarettes	1.4	*	0.8	*	0.9	1.0	1.4	1.6	2.2	3.1
31–40 cigarettes	1.0	*	0.5	*	*	0.7	1.1	1.2	1.5	*
41 cigarettes or more	0.2	*	*	*	*	0.2	0.2	0.2	*	*

[1]Includes races other than white and black.

NOTE: Excludes data for California, Indiana, New York, and South Dakota, which did not require reporting of tobacco use during pregnancy.

Table 29. Number of live births by smoking status of mother and percent of mothers who smoked cigarettes during pregnancy, by age and Hispanic origin of mother and by race of mother for mothers of non-Hispanic origin: Total of 46 reporting States and the District of Columbia, 1993

Origin of mother	Smoking status				Age of mother									
							15–19 years							
	Total	Smoker	Nonsmoker	Not stated	All ages	Under 15 years	Total	15–17 years	18–19 years	20–24 years	25–29 years	30–34 years	35–39 years	40–49 years
	Number				Percent smokers									
All origins[1]	3,037,856	469,926	2,513,276	54,654	15.8	7.0	17.5	14.8	19.0	19.2	14.8	13.4	12.8	11.0
Hispanic	338,005	16,715	316,588	4,702	5.0	4.1	5.2	5.1	5.3	5.2	4.7	5.0	5.1	4.4
Mexican	214,915	7,935	204,430	2,550	3.7	2.9	3.9	3.7	3.9	3.6	3.5	4.0	4.4	3.9
Puerto Rican	36,471	3,975	31,384	1,112	11.2	*	9.6	8.7	10.2	12.5	11.3	11.2	11.4	8.0
Cuban	10,516	519	9,920	77	5.0	*	6.5	*	5.9	4.9	4.3	5.5	5.5	*
Central and South Americ	38,997	868	37,564	565	2.3	*	2.9	2.2	3.4	2.1	1.8	2.4	2.6	3.9
Other and unknown Hispanic	37,106	3,418	33,290	398	9.3	*	8.8	8.5	9.0	10.0	9.5	9.2	8.0	6.9
Non-Hispanic[2]	2,671,767	448,326	2,176,282	47,159	17.1	7.6	19.7	16.8	21.3	21.3	15.9	14.1	13.5	11.7
White	2,030,961	371,813	1,622,967	36,181	18.6	20.3	28.8	27.4	29.3	25.5	16.2	13.6	12.8	11.2
Black	534,511	66,963	458,916	8,632	12.7	2.0	5.2	3.8	6.3	10.9	16.6	20.3	20.6	17.4

[1]Includes origin not stated.
[2]Includes races other than white and black.

NOTE: Excludes data for California, Indiana, New York, and South Dakota, which did not require reporting of tobacco use during pregnancy.

Table 30. Number of live births, percent of mothers who smoked cigarettes during pregnancy, and percent distribution by average number of cigarettes smoked by mothers per day, according to educational attainment and race of mother: Total of 46 reporting States and the District of Columbia, 1993

Smoking measure and race of mother	Total	Years of school completed by mother					
		0–8 years	9–11 years	12 years	13–15 years	16 years or more	Not stated
				All births			
All races[1]	3,037,856	143,022	499,524	1,099,790	655,339	597,956	42,225
White	2,380,728	115,248	338,854	843,378	526,190	527,635	29,423
Black	544,368	19,962	143,885	220,880	108,232	42,266	9,143
				Percent			
Smoker[1]	15.8	15.2	29.0	19.3	11.3	3.1	15.6
White	16.8	16.6	34.0	21.3	12.0	3.2	16.3
Black	12.7	10.2	18.2	12.6	9.0	4.1	17.2
All races[1]				Percent distribution			
Smoker	100.0	100.0	100.0	100.0	100.0	100.0	100.0
10 cigarettes or less	62.7	57.2	61.6	62.3	65.5	71.5	64.2
11–20 cigarettes	32.1	34.5	32.6	32.9	30.2	25.2	30.8
21 cigarettes or more	5.2	8.3	5.8	4.9	4.3	3.3	5.0
White							
Smoker	100.0	100.0	100.0	100.0	100.0	100.0	100.0
10 cigarettes or less	59.7	54.9	57.7	59.3	63.2	70.2	60.0
11–20 cigarettes	34.6	36.2	35.8	35.4	32.1	26.3	34.3
21 cigarettes or more	5.7	8.8	6.5	5.3	4.7	3.6	5.7
Black							
Smoker	100.0	100.0	100.0	100.0	100.0	100.0	100.0
10 cigarettes or less	78.3	75.1	76.8	79.5	79.3	82.3	76.1
11–20 cigarettes	19.1	20.4	20.1	18.3	18.8	16.5	20.8
21 cigarettes or more	2.6	4.6	3.1	2.2	1.9	*	3.1

[1] Includes races other than white and black.

NOTE: Excludes data for California, Indiana, New York, and South Dakota, which did not require reporting of tobacco use during pregnancy.

Table 31. Percent low birthweight by smoking status, age, and race of mother: Total of 46 reporting States and the District of Columbia, 1993

[Low birthweight is defined as weight of less than 2,500 grams (5 lb 8 oz)]

Smoking status and race of mother	All ages	Age of mother								
		Under 15 years	15–19 years			20–24 years	25–29 years	30–34 years	35–39 years	40–49 years
			Total	15–17 years	18–19 years					
All races[1]										
Total	7.4	13.8	9.6	10.5	9.0	7.5	6.5	6.8	8.0	9.0
Smoker	11.8	14.7	10.8	11.4	10.5	10.4	11.5	13.6	16.1	17.8
Nonsmoker	6.6	13.8	9.3	10.3	8.6	6.8	5.6	5.7	6.8	7.9
Not stated	9.2	14.2	11.8	12.9	11.1	9.0	8.2	8.7	9.9	10.3
White										
Total	6.1	10.8	7.9	8.6	7.5	6.1	5.4	5.7	6.8	7.7
Smoker	10.1	14.0	10.3	11.0	9.9	9.2	9.4	10.9	13.3	14.7
Nonsmoker	5.2	10.3	7.1	7.9	6.6	5.2	4.6	4.9	5.9	6.9
Not stated	7.6	*	9.7	10.9	9.1	7.8	6.6	7.4	8.2	9.5
Black										
Total	13.4	16.1	13.4	13.9	13.0	12.3	13.2	14.8	16.6	17.4
Smoker	22.6	19.6	17.2	17.1	17.3	18.8	23.2	26.3	27.8	30.4
Nonsmoker	12.0	15.9	13.1	13.7	12.6	11.4	11.2	11.8	13.6	14.6
Not stated	16.9	*	17.5	17.5	17.4	13.9	16.9	18.4	23.7	22.7

[1]Includes races other than white and black.

NOTE: Excludes data for California, Indiana, New York, and South Dakota, which did not require reporting of tobacco use during pregnancy.

Table 32. Number of live births by drinking status of mother, percent of mothers who drank during pregnancy, and percent distribution by average number of drinks per week, according to age and race of mother: Total of 47 reporting States and the District of Columbia, 1993

Drinking status, drinking measure, and race of mother	All ages	Age of mother									
		Under 15 years	15–19 years			20–24 years	25–29 years	30–34 years	35–39 years	40–49 years
			Total	15–17 years	18–19 years					
All races[1]					Number					
Total	3,121,805	10,323	405,726	153,824	251,902	827,172	879,027	691,568	264,863	43,126
Drinker	63,806	79	4,362	1,495	2,867	13,434	17,745	18,496	8,355	1,335
Nondrinker	2,999,180	10,060	394,294	149,700	244,594	799,142	845,198	659,175	250,607	40,704
Not stated	58,819	184	7,070	2,629	4,441	14,596	16,084	13,897	5,901	1,087
White										
Total	2,454,441	4,256	268,150	93,737	174,413	620,737	721,609	583,678	220,903	35,108
Drinker	44,767	49	3,006	989	2,017	8,915	11,812	13,593	6,373	1,019
Nondrinker	2,363,775	4,121	260,272	91,053	169,219	600,966	696,999	558,589	209,646	33,182
Not stated	45,899	86	4,872	1,695	3,177	10,856	12,798	11,496	4,884	907
Black										
Total	553,742	5,816	126,002	55,739	70,263	180,044	124,077	80,220	32,037	5,546
Drinker	16,633	26	1,028	355	673	3,834	5,275	4,427	1,767	276
Nondrinker	527,261	5,703	123,090	54,575	68,515	173,217	116,337	74,135	29,613	5,166
Not stated	9,848	87	1,884	809	1,075	2,993	2,465	1,658	657	104
					Percent					
Drinker[1]	2.1	0.8	1.1	1.0	1.2	1.7	2.1	2.7	3.2	3.2
White	1.9	1.2	1.1	1.1	1.2	1.5	1.7	2.4	3.0	3.0
Black	3.1	0.5	0.8	0.6	1.0	2.2	4.3	5.6	5.6	5.1
All races[1]					Percent distribution					
Drinker	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1 drink or less	55.2	62.9	56.6	56.5	56.7	53.8	54.6	56.6	54.8	54.7
2 drinks	18.2	*	18.3	20.0	17.5	18.3	17.3	18.8	19.0	17.5
3–4 drinks	12.2	*	12.0	10.9	12.6	12.2	12.5	11.8	12.6	13.3
5 drinks or more	14.4	*	13.1	12.7	13.3	15.8	15.6	12.8	13.7	14.4
White										
Drinker	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1 drink or less	63.3	*	59.9	59.9	59.9	60.3	65.1	65.4	61.2	61.4
2 drinks	16.7	*	16.7	16.9	16.7	16.5	14.8	17.4	18.5	16.5
3–4 drinks	10.0	*	11.0	10.7	11.2	10.2	9.9	9.3	10.8	12.7
5 drinks or more	10.0	*	12.3	12.5	12.2	13.0	10.3	7.9	9.5	9.4
Black										
Drinker	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1 drink or less	34.2	*	46.0	46.3	45.8	39.6	32.6	30.3	32.3	29.7
2 drinks	22.7	*	23.2	27.1	21.3	22.9	22.7	23.1	21.1	23.1
3–4 drinks	18.0	*	15.9	13.8	17.1	15.8	18.4	19.4	19.2	15.4
5 drinks or more	25.2	*	14.9	12.8	15.9	21.7	26.4	27.2	27.5	31.8

[1]Includes races other than white and black.

NOTE: Excludes data for California, New York, and South Dakota, which did not require reporting of alcohol use during pregnancy.

Table 33. Live births by month of pregnancy prenatal care began and percent of mothers beginning care in the first trimester and percent with late or no care, by age and race of mother: United States, 1993

Age and race of mother	All births	Month of pregnancy prenatal care began									
		1st trimester			2d trimester	Late or no care			Not stated	Percent	
		Total	1st and 2d months	3d month	4th–6th months	Total	7th–9th months	No care		1st trimester	Late or no care
All races[1]	4,000,240	3,085,850	2,279,164	806,686	636,280	189,079	126,592	62,487	89,031	78.9	4.8
Under 15 years	12,554	5,425	3,104	2,321	4,672	2,008	1,340	668	449	44.8	16.6
15–19 years	501,093	302,199	187,047	115,152	142,533	43,394	30,502	12,892	12,967	61.9	8.9
15 years	30,074	15,345	8,912	6,433	10,165	3,586	2,564	1,022	978	52.7	12.3
16 years	61,960	34,613	20,542	14,071	19,606	6,042	4,220	1,822	1,699	57.4	10.0
17 years	98,501	58,200	35,274	22,926	28,892	8,732	6,084	2,648	2,677	60.7	9.1
18 years	138,313	84,256	52,393	31,863	38,960	11,669	8,232	3,437	3,428	62.5	8.7
19 years	172,245	109,785	69,926	39,859	44,910	13,365	9,402	3,963	4,185	65.3	8.0
20–24 years	1,038,127	738,516	512,459	226,057	212,672	62,869	43,049	19,820	24,070	72.8	6.2
25–29 years	1,128,862	924,016	705,220	218,796	140,214	41,393	26,927	14,466	23,239	83.6	3.7
30–34 years	901,151	767,288	601,092	166,196	89,744	25,653	16,111	9,542	18,466	86.9	2.9
35–39 years	357,053	299,755	233,322	66,433	38,029	11,092	6,974	4,118	8,177	85.9	3.2
40 years and over	61,400	48,651	36,920	11,731	8,416	2,670	1,689	981	1,663	81.4	4.5
White	3,149,833	2,527,853	1,894,676	633,177	441,270	121,358	85,124	36,234	59,352	81.8	3.9
Under 15 years	5,755	2,706	1,598	1,108	1,942	896	598	298	211	48.8	16.2
15–19 years	341,817	216,143	134,517	81,626	91,242	26,777	19,275	7,502	7,655	64.7	8.0
15 years	16,656	9,049	5,276	3,773	5,240	1,896	1,373	523	471	55.9	11.7
16 years	38,721	22,623	13,378	9,245	11,580	3,594	2,543	1,051	924	59.9	9.5
17 years	65,932	40,848	24,872	15,976	18,285	5,258	3,714	1,544	1,541	63.4	8.2
18 years	96,747	61,460	38,341	23,119	25,738	7,470	5,442	2,028	2,079	64.9	7.9
19 years	123,761	82,163	52,650	29,513	30,399	8,559	6,203	2,356	2,640	67.8	7.1
20–24 years	790,154	583,949	409,737	174,212	149,056	41,311	29,506	11,805	15,838	75.4	5.3
25–29 years	920,772	776,841	599,802	177,039	101,100	26,994	18,642	8,352	15,837	85.8	3.0
30–34 years	749,446	655,165	518,654	136,511	64,878	16,435	11,069	5,366	12,968	89.0	2.2
35–39 years	292,693	252,821	199,340	53,481	27,065	7,141	4,836	2,305	5,666	88.1	2.5
40 years and over	49,196	40,228	31,028	9,200	5,987	1,804	1,198	606	1,177	83.8	3.8
Black	658,875	419,627	285,960	133,667	158,883	57,064	33,161	23,903	23,301	66.0	9.0
Under 15 years	6,417	2,570	1,430	1,140	2,571	1,057	703	354	219	41.5	17.1
15–19 years	143,153	77,456	47,431	30,025	46,092	14,832	9,826	5,006	4,773	56.0	10.7
15 years	12,389	5,814	3,346	2,468	4,565	1,542	1,075	467	468	48.8	12.9
16 years	21,319	11,060	6,616	4,444	7,330	2,224	1,498	726	705	53.7	10.8
17 years	29,448	15,707	9,463	6,244	9,593	3,116	2,093	1,023	1,032	55.3	11.0
18 years	37,221	20,500	12,719	7,781	11,782	3,725	2,435	1,290	1,214	56.9	10.3
19 years	42,776	24,375	15,287	9,088	12,822	4,225	2,725	1,500	1,354	58.8	10.2
20–24 years	208,149	129,147	85,901	43,246	53,716	18,552	11,235	7,317	6,734	64.1	9.2
25–29 years	151,566	104,840	74,893	29,947	29,546	11,613	6,088	5,525	5,567	71.8	8.0
30–34 years	100,966	71,986	52,483	19,503	17,745	7,283	3,526	3,757	3,952	74.2	7.5
35–39 years	41,348	28,837	20,568	8,269	7,670	3,118	1,491	1,627	1,723	72.8	7.9
40 years and over	7,276	4,791	3,254	1,537	1,543	609	292	317	333	69.0	8.8

[1] Includes races other than white and black.

Table 34. Percent of mothers beginning prenatal care in the first trimester and percent of mothers with late or no prenatal care by race of mother: United States and each State, 1993

[By place of residence]

State	Percent beginning care in 1st trimester			Percent late[1] or no care		
	All races[2]	White	Black	All races[2]	White	Black
United States	78.9	81.8	66.0	4.8	3.9	9.0
Alabama	80.1	86.8	67.6	4.2	2.5	7.5
Alaska	83.3	85.9	85.6	2.8	1.9	*
Arizona	69.9	71.5	64.5	8.5	8.0	10.8
Arkansas	73.8	78.4	58.5	5.7	4.2	10.7
California	76.8	76.7	74.3	5.0	5.2	5.8
Colorado	79.5	80.5	67.4	5.1	4.7	9.4
Connecticut	88.0	90.0	74.3	2.5	1.9	6.7
Delaware	82.2	86.5	67.9	3.8	2.5	8.0
District of Columbia	54.9	81.1	50.5	15.8	7.1	17.6
Florida	80.2	84.1	67.4	4.0	3.0	7.2
Georgia	78.7	84.7	68.4	4.5	2.9	7.3
Hawaii	74.5	78.7	71.0	6.0	4.7	4.1
Idaho	78.0	78.5	77.8	4.5	4.4	*
Illinois	79.3	83.6	64.8	4.6	3.3	9.2
Indiana	79.1	81.1	62.8	4.8	4.1	9.8
Iowa	86.8	87.4	72.3	2.3	2.2	7.2
Kansas	83.7	85.2	71.5	3.2	2.7	6.9
Kentucky	81.2	82.7	66.5	3.6	3.1	7.7
Louisiana	77.4	85.9	66.4	4.8	2.5	7.7
Maine	88.0	88.2	87.7	1.7	1.6	*
Maryland	85.3	91.2	73.5	3.8	1.8	7.8
Massachusetts	88.0	89.7	77.2	2.0	1.7	4.5
Michigan	81.8	85.6	67.0	3.6	2.3	8.5
Minnesota	82.9	85.6	57.0	3.1	2.2	11.6
Mississippi	74.9	84.9	64.5	5.4	2.7	8.1
Missouri	81.5	85.1	64.8	4.0	2.6	10.4
Montana	80.5	82.7	76.6	3.7	3.0	*
Nebraska	83.2	84.7	66.6	2.8	2.4	6.8
Nevada	73.1	74.8	58.7	7.7	7.0	13.8
New Hampshire	88.5	88.6	74.0	1.6	1.6	*
New Jersey	81.6	86.1	62.9	4.4	2.8	11.3
New Mexico	63.9	66.8	59.3	9.3	8.1	10.4
New York	74.6	79.3	59.0	6.4	4.8	11.8
North Carolina	80.7	86.8	66.7	4.0	2.2	8.0
North Dakota	82.8	84.1	86.5	2.4	1.8	*
Ohio	83.7	86.6	68.9	3.5	2.6	8.5
Oklahoma	74.3	77.4	58.9	7.0	5.7	14.0
Oregon	79.5	80.0	68.2	3.8	3.7	7.3
Pennsylvania	80.8	84.9	58.7	4.7	3.0	14.5
Rhode Island	89.2	90.8	76.3	1.6	1.3	3.7
South Carolina	73.5	82.5	59.1	6.3	3.6	10.8
South Dakota	79.9	83.4	80.3	4.8	2.9	*
Tennessee	81.2	85.4	68.2	3.6	2.4	7.1
Texas	71.9	72.7	65.1	8.4	8.2	10.9
Utah	85.7	86.6	72.7	2.4	2.1	*
Vermont	85.1	85.4	*	2.4	2.3	*
Virginia	82.8	87.4	70.1	3.4	2.1	6.9
Washington	80.7	81.8	70.4	3.7	3.3	7.6
West Virginia	79.2	79.9	60.6	3.7	3.4	11.5
Wisconsin	82.2	86.0	60.9	3.6	2.5	10.9
Wyoming	81.2	81.9	71.7	2.9	2.6	*

[1] Care beginning in 3d trimester.
[2] Includes races other than white and black.

Table 35. Live births by month of pregnancy prenatal care began, number of prenatal visits, and median number of visits, by race of mother: United States, 1993

Number of prenatal visits and race of mother	All births	Month of pregnancy prenatal care began							
		1st trimester			2d trimester	Late or no care			
		Total	1st and 2d months	3d month	4th–6th months	Total	7th–9th months	No care	Not stated
All races[1]	4,000,240	3,085,850	2,279,164	806,686	636,280	189,079	126,592	62,487	89,031
No visits	62,487	. . .	. . .	. . .	. . .	62,487	. . .	62,487	. . .
1–2 visits	50,789	10,756	6,515	4,241	13,079	24,615	24,615	. . .	2,339
3–4 visits	101,473	25,101	13,021	12,080	40,574	33,569	33,569	. . .	2,229
5–6 visits	210,108	80,269	42,748	37,521	94,779	31,283	31,283	. . .	3,777
7–8 visits	367,341	208,314	119,808	88,506	136,950	18,390	18,390	. . .	3,687
9–10 visits	765,228	575,343	370,004	205,339	173,636	9,680	9,680	. . .	6,569
11–12 visits	1,030,601	924,888	685,838	239,050	96,851	3,555	3,555	. . .	5,307
13–14 visits	647,818	607,346	493,880	113,466	36,381	1,356	1,356	. . .	2,735
15–16 visits	423,485	398,533	334,275	64,258	22,112	962	962	. . .	1,878
17–18 visits	95,154	90,409	76,454	13,955	4,096	170	170	. . .	479
19 visits or more	132,572	123,427	105,681	17,746	7,790	433	433	. . .	922
Not stated	113,184	41,464	30,940	10,524	10,032	2,579	2,579	. . .	59,109
Median number of visits	12.2	12.5	12.8	11.6	9.4	5.2	5.2	. . .	10.2
White	3,149,833	2,527,853	1,894,676	633,177	441,270	121,358	85,124	36,234	59,352
No visits	36,234	. . .	. . .	. . .	. . .	36,234	. . .	36,234	. . .
1–2 visits	29,582	6,348	3,901	2,447	6,614	15,379	15,379	. . .	1,241
3–4 visits	62,675	15,406	8,055	7,351	23,969	22,009	22,009	. . .	1,291
5–6 visits	141,253	55,473	29,637	25,836	61,922	21,541	21,541	. . .	2,317
7–8 visits	271,847	160,344	93,464	66,880	95,856	13,079	13,079	. . .	2,568
9–10 visits	595,926	460,484	299,927	160,557	123,816	6,747	6,747	. . .	4,879
11–12 visits	854,208	775,630	581,800	193,830	71,888	2,630	2,630	. . .	4,060
13–14 visits	548,103	517,656	424,019	93,637	27,303	1,019	1,019	. . .	2,125
15–16 visits	347,433	329,660	279,024	50,636	15,648	693	693	. . .	1,432
17–18 visits	79,009	75,465	64,049	11,416	3,033	126	126	. . .	385
19 visits or more	107,287	101,120	87,687	13,433	5,194	279	279	. . .	694
Not stated	76,276	30,267	23,113	7,154	6,027	1,622	1,622	. . .	38,360
Median number of visits	12.3	12.6	12.8	11.7	9.6	5.4	5.4	. . .	10.5
Black	658,875	419,627	285,960	133,667	158,883	57,064	33,161	23,903	23,301
No visits	23,903	. . .	. . .	. . .	. . .	23,903	. . .	23,903	. . .
1–2 visits	18,155	3,804	2,222	1,582	5,766	7,620	7,620	. . .	965
3–4 visits	32,384	8,275	4,249	4,026	14,031	9,280	9,280	. . .	798
5–6 visits	55,677	20,159	10,728	9,431	26,644	7,631	7,631	. . .	1,243
7–8 visits	74,272	36,582	19,941	16,641	32,677	4,127	4,127	. . .	886
9–10 visits	129,609	85,594	51,608	33,986	40,346	2,325	2,325	. . .	1,344
11–12 visits	129,687	108,217	74,292	33,925	19,790	716	716	. . .	964
13–14 visits	73,757	65,740	50,792	14,948	7,291	258	258	. . .	468
15–16 visits	58,710	52,568	41,996	10,572	5,551	221	221	. . .	370
17–18 visits	12,224	11,236	9,260	1,976	875	35	35	. . .	78
19 visits or more	20,694	18,055	14,400	3,655	2,327	123	123	. . .	189
Not stated	29,803	9,397	6,472	2,925	3,585	825	825	. . .	15,996
Median number of visits	10.9	12.3	12.6	11.0	8.9	4.8	4.8	. . .	8.5

[1] Includes races other than white and black.

Table 36. Live births to mothers with selected obstetric procedures and rates by age of mother, by race of mother: United States, 1993

[Rates are number of live births with specified procedure per 1,000 live births in specified group]

Obstetric procedure and race of mother	All births[1]	Obstetric procedure reported	Age of mother							Not stated
			All ages	Under 20 years	20–24 years	25–29 years	30–34 years	35–39 years	40–49 years	
All races[2]	Number		Rate							Number
Amniocentesis	4,000,240	124,511	31.5	9.6	12.0	15.3	28.7	150.4	195.8	49,610
Electronic fetal monitoring	4,000,240	3,120,636	789.9	796.0	792.3	792.8	788.2	774.7	758.5	49,610
Induction of labor	4,000,240	527,756	133.6	116.0	128.9	139.6	139.4	137.0	144.3	49,610
Stimulation of labor	4,000,240	544,105	137.7	140.1	139.2	140.7	135.4	128.9	123.0	49,610
Tocolysis	4,000,240	73,106	18.5	20.3	19.4	17.7	17.6	18.2	17.3	49,610
Ultrasound	4,000,240	2,375,698	601.3	580.7	595.1	606.2	611.6	608.3	598.1	49,610
White										
Amniocentesis	3,149,833	106,561	34.3	10.1	12.4	15.8	30.1	161.5	211.0	38,596
Electronic fetal monitoring	3,149,833	2,472,079	794.6	799.2	796.1	798.7	793.8	779.2	761.3	38,596
Induction of labor	3,149,833	445,892	143.3	126.7	140.2	148.4	147.0	144.8	151.7	38,596
Stimulation of labor	3,149,833	440,431	141.6	147.1	143.9	144.2	138.0	131.9	127.0	38,596
Tocolysis	3,149,833	59,597	19.2	22.1	20.4	18.2	18.0	18.7	17.3	38,596
Ultrasound	3,149,833	1,919,655	617.0	600.1	612.0	620.4	624.8	621.2	610.4	38,596
Black										
Amniocentesis	658,875	11,298	17.4	8.5	10.7	13.2	19.7	76.8	110.8	8,850
Electronic fetal monitoring	658,875	510,864	785.9	795.4	789.1	780.3	778.5	775.4	777.7	8,850
Induction of labor	658,875	63,583	97.8	93.3	93.0	101.1	105.2	104.6	119.4	8,850
Stimulation of labor	658,875	78,947	121.5	125.1	123.5	121.8	117.5	109.0	105.8	8,850
Tocolysis	658,875	10,368	16.0	16.1	16.0	15.6	16.2	15.6	15.1	8,850
Ultrasound	658,875	353,322	543.6	540.2	542.8	543.3	548.7	546.8	549.3	8,850

[1] Total number of births.
[2] Includes races other than white and black.

Table 37. Live births to mothers with selected complications of labor and/or delivery and rates by age of mother, by race of mother: United States, 1993

[Rates are number of live births with specified complication per 1,000 live births in specified group]

Complication and race of mother	All births[1]	Complication reported	Age of mother: All ages	Under 20 years	20–24 years	25–29 years	30–34 years	35–39 years	40–49 years	Not stated
All races[2]	Number					Rate				Number
Febrile	4,000,240	58,880	14.9	18.5	15.5	15.1	13.4	12.4	11.5	60,704
Meconium, moderate/heavy	4,000,240	227,646	57.8	62.4	58.5	56.2	55.7	58.2	63.5	60,704
Premature rupture of membrane	4,000,240	122,386	31.1	30.6	29.2	30.6	32.0	35.2	37.9	60,704
Abruptio placenta	4,000,240	22,972	5.8	5.4	5.5	5.5	6.1	7.4	8.5	60,704
Placenta previa	4,000,240	13,646	3.5	1.3	2.1	3.3	4.8	6.7	9.6	60,704
Other excessive bleeding	4,000,240	21,310	5.4	4.9	5.0	5.3	5.8	6.6	7.3	60,704
Seizures during labor	4,000,240	1,491	0.4	0.8	0.4	0.3	0.3	0.3	0.3	60,704
Precipitous labor	4,000,240	74,920	19.0	14.3	18.1	18.9	21.1	22.9	23.6	60,704
Prolonged labor	4,000,240	36,677	9.3	10.2	9.6	9.3	8.5	9.1	9.6	60,704
Dysfunctional labor	4,000,240	117,931	29.9	29.3	29.5	31.0	29.4	29.7	33.0	60,704
Breech/Malpresentation	4,000,240	148,882	37.8	29.3	32.3	38.5	42.8	48.5	54.0	60,704
Cephalopelvic disproportion[3]	3,678,169	110,076	30.4	28.5	29.5	32.1	30.6	30.3	30.9	61,556
Cord prolapse	4,000,240	9,150	2.3	1.9	2.1	2.4	2.4	2.9	3.5	60,704
Anesthetic complication[3]	3,678,169	2,228	0.6	0.3	0.5	0.7	0.8	0.8	0.9	61,556
Fetal distress[3]	3,678,169	150,821	41.7	46.5	42.0	40.0	39.4	43.4	52.6	61,556
White										
Febrile	3,149,833	43,706	14.1	16.6	14.7	14.5	12.8	11.9	11.1	46,922
Meconium, moderate/heavy	3,149,833	164,229	52.9	55.5	53.6	51.5	51.7	54.5	59.8	46,922
Premature rupture of membrane	3,149,833	93,310	30.1	28.8	28.2	29.7	30.9	34.4	37.6	46,922
Abruptio placenta	3,149,833	17,556	5.7	5.2	5.3	5.3	5.9	7.1	8.2	46,922
Placenta previa	3,149,833	10,655	3.4	1.3	2.1	3.1	4.7	6.4	9.6	46,922
Other excessive bleeding	3,149,833	17,060	5.5	5.2	5.1	5.3	5.7	6.4	7.4	46,922
Seizures during labor	3,149,833	1,042	0.3	0.7	0.4	0.3	0.2	0.3	*	46,922
Precipitous labor	3,149,833	56,398	18.2	12.8	16.4	18.0	20.7	22.8	22.9	46,922
Prolonged labor	3,149,833	29,825	9.6	10.7	10.1	9.6	8.7	9.4	10.1	46,922
Dysfunctional labor	3,149,833	96,240	31.0	31.2	31.1	32.0	29.8	30.1	33.6	46,922
Breech/Malpresentation	3,149,833	123,738	39.9	32.9	34.5	40.0	44.0	49.2	54.6	46,922
Cephalopelvic disproportion[3]	2,877,622	89,573	31.7	29.7	31.5	33.3	31.0	30.8	30.7	47,598
Cord prolapse	3,149,833	7,007	2.3	1.7	2.0	2.4	2.3	2.8	3.4	46,922
Anesthetic complication[3]	2,877,622	1,806	0.6	0.4	0.5	0.7	0.8	0.8	1.0	47,598
Fetal distress[3]	2,877,622	111,978	39.6	44.1	40.5	38.0	37.2	41.1	49.9	47,598
Black										
Febrile	658,875	11,870	18.3	22.9	18.1	17.6	15.6	13.8	12.8	11,135
Meconium, moderate/heavy	658,875	52,625	81.2	78.8	77.6	83.5	86.2	86.7	89.0	11,135
Premature rupture of membrane	658,875	23,429	36.2	33.9	32.7	37.0	41.6	43.9	45.8	11,135
Abruptio placenta	658,875	4,527	7.0	5.8	6.3	7.4	8.2	9.7	10.7	11,135
Placenta previa	658,875	2,177	3.4	1.3	2.3	3.9	5.5	7.9	8.1	11,135
Other excessive bleeding	658,875	2,295	3.5	3.0	3.2	3.7	4.0	5.1	5.2	11,135
Seizures during labor	658,875	382	0.6	0.9	0.5	0.5	0.5	*	*	11,135
Precipitous labor	658,875	13,942	21.5	16.5	22.6	23.1	23.8	23.0	22.6	11,135
Prolonged labor	658,875	4,678	7.2	8.3	7.1	7.1	6.4	6.6	7.4	11,135
Dysfunctional labor	658,875	16,604	25.6	25.3	24.1	26.6	27.0	26.7	31.2	11,135
Breech/Malpresentation	658,875	18,664	28.8	21.0	24.2	31.1	37.5	46.1	53.9	11,135
Cephalopelvic disproportion[3]	617,181	15,002	24.8	26.2	22.9	25.3	25.8	23.9	26.0	11,295
Cord prolapse	658,875	1,723	2.7	2.3	2.4	2.7	3.2	3.6	4.8	11,135
Anesthetic complication[3]	617,181	324	0.5	0.3	0.4	0.6	0.7	0.9	*	11,295
Fetal distress[3]	617,181	32,687	53.9	53.7	49.6	54.2	57.7	62.9	74.8	11,295

[1] Total number of births to residents of areas reporting specified complication.
[2] Includes races other than white and black.
[3] Texas does not report this complication.

Table 38. Live births by attendant, place of delivery, and race of mother: United States, 1993

Place of delivery and race of mother	All births	Attendant							
		Physician			Midwife				
		Total	Doctor of medicine	Doctor of osteopathy	Total	Certified nurse midwife	Other midwife	Other	Unspecified
All races[1]									
Total	4,000,240	3,759,963	3,622,304	137,659	210,054	196,228	13,826	27,729	2,494
In hospital[2]	3,959,266	3,751,358	3,614,936	136,422	189,913	188,370	1,543	16,351	1,644
Not in hospital	40,030	7,958	6,759	1,199	20,114	7,833	12,281	11,341	617
Freestanding birthing center	11,238	2,242	1,621	621	8,638	5,016	3,622	327	31
Clinic or doctor's office	977	463	376	87	322	157	165	166	26
Residence	25,084	4,365	3,916	449	10,764	2,539	8,225	9,492	463
Other	2,731	888	846	42	390	121	269	1,356	97
Not specified	944	647	609	38	27	25	2	37	233
White									
Total	3,149,833	2,967,570	2,850,882	116,688	159,814	146,630	13,184	20,586	1,863
In hospital[2]	3,115,570	2,961,659	2,846,118	115,541	140,674	139,426	1,248	11,979	1,258
Not in hospital	33,506	5,382	4,267	1,115	19,120	7,185	11,935	8,591	413
Freestanding birthing center	10,520	2,042	1,427	615	8,138	4,616	3,522	311	29
Clinic or doctor's office	786	368	287	81	302	143	159	96	20
Residence	20,519	2,538	2,147	391	10,333	2,342	7,991	7,341	307
Other	1,681	434	406	28	347	84	263	843	57
Not specified	757	529	497	32	20	19	1	16	192
Black									
Total	658,875	617,024	600,058	16,966	35,694	35,368	326	5,672	485
In hospital[2]	653,593	614,697	597,810	16,887	35,094	34,917	177	3,489	313
Not in hospital	5,112	2,220	2,147	73	594	445	149	2,163	135
Freestanding birthing center	435	97	94	3	325	280	45	11	2
Clinic or doctor's office	123	60	58	2	12	10	2	46	5
Residence	3,705	1,669	1,613	56	227	129	98	1,711	98
Other	849	394	382	12	30	26	4	395	30
Not specified	170	107	101	6	6	6	–	20	37

[1]Includes races other than white and black.
[2]Includes births occurring en route to or on arrival at hospital.

Table 39. Live births by method of delivery and rates of cesarean delivery and vaginal birth after previous cesarean delivery, by race of mother: United States, 1989–93

Year and race of mother	Births by method of delivery							Cesarean delivery rate		
		Vaginal		Cesarean						
	All births	Total	After previous cesarean	Total	Primary	Repeat	Not stated	Total[1]	Primary[2]	Rate of vaginal birth after previous cesarean[3]
All races[4]										
1993	4,000,240	3,098,796	103,581	861,987	539,251	322,736	39,457	21.8	15.3	24.3
1992	4,065,014	3,100,710	97,549	888,622	554,662	333,960	75,682	22.3	15.6	22.6
1991	4,110,907	3,100,891	90,690	905,077	569,195	335,882	104,939	22.6	15.9	21.3
1990[5]	4,110,563	3,111,421	84,299	914,096	575,066	339,030	85,046	22.7	16.0	19.9
1989[6]	3,798,734	2,793,463	71,019	826,955	521,873	305,082	178,316	22.8	16.1	18.9
White										
1993	3,149,833	2,435,229	82,995	682,355	423,540	258,815	32,249	21.9	15.3	24.3
1992	3,201,678	2,434,959	77,977	705,841	437,398	268,443	60,878	22.5	15.7	22.5
1991	3,241,273	2,434,900	72,564	723,088	452,534	270,554	83,285	22.9	16.1	21.1
1990[5]	3,252,473	2,453,857	67,191	732,713	458,656	274,057	65,903	23.0	16.1	19.7
1989[6]	3,022,537	2,212,843	56,851	667,114	418,177	248,937	142,580	22.8	16.1	18.9
Black										
1993	658,875	509,816	16,179	143,452	91,677	51,775	5,607	22.0	15.7	23.8
1992	673,633	514,929	15,382	146,480	93,165	53,315	12,224	22.1	15.7	22.4
1991	682,602	519,047	14,213	145,583	92,645	52,938	17,972	21.9	15.5	21.2
1990[5]	679,236	516,581	13,496	146,472	93,476	52,996	16,183	22.1	15.7	20.3
1989[6]	611,147	452,291	11,104	127,907	82,695	45,212	30,319	22.0	15.8	19.7

[1]Percent of all live births by cesarean delivery.
[2]Number of primary cesareans per 100 live births to women who have not had a previous cesarean.
[3]Number of vaginal births after previous cesarean delivery per 100 live births to women with a previous cesarean delivery.
[4]Includes races other than white and black.
[5]Excludes data for Oklahoma, which did not report method of delivery on the birth certificate.
[6]Excludes data for Louisiana, Maryland, Nebraska, Nevada, and Oklahoma, which did not report method of delivery on the birth certificate.

Table 40. Live births by method of delivery and rates of cesarean delivery and vaginal birth after previous cesarean delivery, by age and race of mother: United States, 1993

Age and race of mother	Births by method of delivery							Cesarean delivery rate		
		Vaginal		Cesarean						
	All births	Total	After previous cesarean	Total	Primary	Repeat	Not stated	Total[1]	Primary[2]	Rate of vaginal birth after previous cesarean[3]
All races[4]	4,000,240	3,098,796	103,581	861,987	539,251	322,736	39,457	21.8	15.3	24.3
Under 20 years	513,647	430,721	4,018	78,776	68,668	10,108	4,150	15.5	13.9	28.4
20–24 years	1,038,127	834,239	21,768	194,805	133,024	61,781	9,083	18.9	14.1	26.1
25–29 years	1,128,862	870,137	32,196	247,323	151,149	96,174	11,402	22.1	15.3	25.1
30–34 years	901,151	670,037	31,139	221,083	120,530	100,553	10,031	24.8	15.9	23.6
35–39 years	357,053	252,498	12,680	100,493	54,282	46,211	4,062	28.5	18.5	21.5
40–49 years	61,400	41,164	1,780	19,507	11,598	7,909	729	32.2	22.7	18.4
White	3,149,833	2,435,229	82,995	682,355	423,540	258,815	32,249	21.9	15.3	24.3
Under 20 years	347,572	291,725	2,283	52,891	46,849	6,042	2,956	15.3	13.9	27.4
20–24 years	790,154	634,076	15,711	149,064	103,229	45,835	7,014	19.0	14.3	25.5
25–29 years	920,772	709,553	26,237	201,688	123,073	78,615	9,531	22.1	15.3	25.0
30–34 years	749,446	558,693	26,524	182,096	98,075	84,021	8,657	24.6	15.6	24.0
35–39 years	292,693	208,004	10,745	81,208	43,263	37,945	3,481	28.1	18.0	22.1
40–49 years	49,196	33,178	1,495	15,408	9,051	6,357	610	31.7	22.2	19.0
Black	658,875	509,816	16,179	143,452	91,677	51,775	5,607	22.0	15.7	23.8
Under 20 years	149,570	124,490	1,628	24,036	20,175	3,861	1,044	16.2	14.1	29.7
20–24 years	208,149	166,299	5,356	40,158	25,653	14,505	1,692	19.5	13.7	27.0
25–29 years	151,566	114,474	4,681	35,668	21,015	14,653	1,424	23.8	16.1	24.2
30–34 years	100,966	71,993	3,114	27,999	15,762	12,237	974	28.0	18.6	20.3
35–39 years	41,348	27,947	1,224	12,999	7,415	5,584	402	31.7	21.7	18.0
40–49 years	7,276	4,613	176	2,592	1,657	935	71	36.0	27.2	15.8

[1]Percent of all live births by cesarean delivery.
[2]Number of primary cesareans per 100 live births to women who have not had a previous cesarean.
[3]Number of vaginal births after previous cesarean delivery per 100 live births to women with a previous cesarean delivery.
[4]Includes races other than white and black.

Table 41. Rates of cesarean delivery and vaginal birth after previous cesarean delivery, by selected maternal medical risk factors, complications of labor and/or delivery, and obstetric procedures: United States, 1993

Medical risk factor, complication, and obstetric procedure	All births to mothers with specified condition and/or procedure	Cesarean delivery rate		Rate of vaginal birth after previous cesarean[3]
		Total[1]	Primary[2]	
Medical risk factors				
Anemia	73,424	23.7	16.8	27.3
Cardiac disease	16,735	26.0	18.7	26.6
Acute or chronic lung disease	18,750	25.9	19.0	26.9
Diabetes	102,234	35.9	25.9	17.9
Genital herpes[4]	30,389	39.9	34.0	27.5
Hydramnios/Oligohydramnios[5]	34,690	40.5	35.2	21.0
Hemoglobinopathy	2,521	27.7	20.6	26.0
Hypertension, chronic	26,518	40.0	30.8	15.8
Hypertension, pregnancy-associated	116,901	38.9	34.3	18.5
Eclampsia	13,094	50.7	46.5	14.9
Incompetent cervix	8,935	31.2	24.1	25.6
Renal disease	8,986	27.2	20.3	25.4
Rh sensitization[6]	23,906	22.6	15.8	28.0
Uterine bleeding[4]	28,360	31.8	24.9	23.5
Complications of labor and/or delivery				
Febrile	58,880	32.8	30.7	44.5
Meconium, moderate/heavy	227,646	21.5	18.6	45.3
Premature rupture of membrane	122,386	27.1	23.9	36.2
Abruptio placenta	22,972	58.8	54.5	16.4
Placenta previa	13,646	82.9	79.1	3.6
Other excessive bleeding	21,310	27.3	21.4	31.8
Seizures during labor	1,491	50.6	47.5	18.0
Precipitous labor (less than 3 hours	74,920	1.9	1.4	85.2
Prolonged labor (more than 20 hours	36,677	36.7	35.2	43.9
Dysfunctional labor	117,931	67.4	65.5	17.0
Breech/Malpresentation	148,882	85.2	83.7	5.0
Cephalopelvic disproportion[7]	110,076	97.6	97.3	1.0
Cord prolapse	9,150	67.2	64.9	13.8
Anesthetic complications[7]	2,228	46.6	38.0	17.6
Fetal distress[7]	150,821	58.9	56.5	20.0
Obstetric procedures				
Amniocentesis	124,511	34.8	24.1	19.4
Electronic fetal monitoring	3,120,636	21.2	15.4	28.2
Induction of labor	527,756	19.2	17.4	54.7
Stimulation of labor	544,105	15.0	13.6	63.4
Tocolysis	73,106	28.0	22.3	26.5
Ultrasound	2,375,698	23.7	16.7	24.2

[1]Percent of all live births by cesarean delivery.
[2]Number of primary cesareans per 100 live births to women who have not had a previous cesarean.
[3]Number of vaginal births after previous cesarean delivery per 100 live births to women with a previous cesarean delivery.
[4]Texas does not report this risk factor.
[5]New York City (but not New York State) reports this risk factor.
[6]Kansas does not report this risk factor.
[7]Texas does not report this complication.

Table 42. Live births by birthweight and percent very low and low birthweight, by period of gestation and race of mother: United States, 1993

Birthweight[1] and race of mother	All births	Period of gestation[2]										
		Preterm					Term				Postterm	
		Total, under 37 weeks	Under 28 weeks	28–31 weeks	32–35 weeks	36 weeks	Total, 37–41 weeks	37–39 weeks	40 weeks	41 weeks	42 weeks and over	Not stated
						Number						
All races[3]	4,000,240	435,625	28,871	47,827	205,883	153,044	3,152,109	1,731,546	897,934	522,629	376,660	35,846
Less than 500 grams	5,525	5,358	5,126	211	20	1	12	8	2	2	4	151
500–999 grams	20,760	19,997	15,210	4,185	563	39	224	135	63	26	20	519
1,000–1,499 grams	26,753	24,539	4,259	13,648	6,042	590	1,532	1,111	251	170	262	420
1,500–1,999 grams	55,172	44,272	1,230	11,116	27,337	4,589	9,360	7,668	1,095	597	833	707
2,000–2,499 grams	180,272	86,991	955	4,894	55,175	25,967	84,829	67,408	11,923	5,498	6,586	1,866
2,500–2,999 grams	653,329	115,123	1,334	5,186	53,179	55,424	489,260	346,679	96,755	45,826	42,995	5,951
3,000–3,499 grams	1,473,810	90,673	–	5,629	40,123	44,921	1,236,195	720,247	339,188	176,760	134,747	12,195
3,500–3,999 grams	1,161,340	38,050	–	2,840	18,357	16,853	981,876	456,756	324,620	200,500	132,414	9,000
4,000–4,499 grams	351,928	7,929	–	–	4,108	3,821	293,156	111,875	104,469	76,812	48,056	2,787
4,500–4,999 grams	59,574	1,299	–	–	660	639	48,434	16,602	17,263	14,569	9,310	531
5,000 grams or more	6,985	213	–	–	119	94	5,471	2,065	1,822	1,584	1,199	102
Not stated	4,792	1,181	757	118	200	106	1,760	992	483	285	234	1,617
						Percent						
Very low birthweight[4]	1.3	11.5	87.5	37.8	3.2	0.4	0.1	0.1	0.0	0.0	0.1	3.2
Low birthweight[5]	7.2	41.7	95.3	71.4	43.3	20.4	3.0	4.4	1.5	1.2	2.0	10.7
						Number						
White	3,149,833	295,267	15,935	29,235	138,877	111,220	2,524,900	1,356,727	733,136	435,037	302,579	27,087
Less than 500 grams	2,942	2,865	2,743	109	12	1	3	2	1	0	3	71
500–999 grams	12,006	11,531	8,589	2,573	348	21	155	93	44	18	14	306
1,000–1,499 grams	16,870	15,489	2,491	8,685	3,941	372	966	685	161	120	159	256
1,500–1,999 grams	35,985	28,932	582	7,181	18,150	3,019	6,115	5,038	715	362	516	422
2,000–2,499 grams	120,446	58,393	458	2,655	37,517	17,763	56,557	45,090	7,837	3,630	4,271	1,225
2,500–2,999 grams	459,729	79,058	652	2,686	35,746	39,974	346,864	245,328	68,524	33,012	29,763	4,044
3,000–3,499 grams	1,147,251	62,922	–	3,285	26,131	33,506	970,634	561,431	268,024	141,179	104,397	9,298
3,500–3,999 grams	981,051	27,995	–	1,984	13,114	12,897	834,186	384,301	277,040	172,845	111,454	7,416
4,000–4,499 grams	310,826	6,205	–	–	3,168	3,037	259,831	97,627	93,234	68,970	42,400	2,390
4,500–4,999 grams	53,219	1,013	–	–	523	490	43,417	14,622	15,565	13,230	8,322	467
5,000 grams or more	6,053	155	–	–	86	69	4,743	1,728	1,592	1,423	1,082	73
Not stated	3,455	709	420	77	141	71	1,429	782	399	248	198	1,119
						Percent						
Very low birthweight[4]	1.0	10.1	89.1	39.0	3.1	0.4	0.0	0.1	0.0	0.0	0.1	2.4
Low birthweight[5]	6.0	39.8	95.8	72.7	43.2	19.1	2.5	3.8	1.2	0.9	1.6	8.8
						Number						
Black	658,875	120,586	12,090	16,726	57,344	34,426	474,505	284,538	123,499	66,468	57,986	5,798
Less than 500 grams	2,428	2,345	2,238	99	8	0	9	6	1	2	1	73
500–999 grams	8,117	7,868	6,186	1,478	188	16	63	39	18	6	5	181
1,000–1,499 grams	8,956	8,236	1,643	4,511	1,887	195	493	372	78	43	95	132
1,500–1,999 grams	17,049	13,714	615	3,551	8,180	1,368	2,825	2,292	331	202	289	221
2,000–2,499 grams	51,194	24,900	463	2,047	15,372	7,018	23,767	18,681	3,477	1,609	2,030	497
2,500–2,999 grams	154,825	30,541	634	2,233	14,952	12,722	112,010	79,314	22,297	10,399	10,971	1,303
3,000–3,499 grams	248,296	22,868	–	2,051	11,610	9,207	199,760	119,078	53,445	27,237	23,925	1,743
3,500–3,999 grams	132,440	8,065	–	723	4,204	3,138	107,608	52,766	34,527	20,315	15,818	949
4,000–4,499 grams	29,295	1,371	–	–	770	601	23,654	10,153	7,918	5,583	4,042	228
4,500–4,999 grams	4,479	215	–	–	102	113	3,535	1,429	1,170	936	704	25
5,000 grams or more	658	42	–	–	22	20	516	243	169	104	78	22
Not stated	1,138	421	311	33	49	28	265	165	68	32	28	424
						Percent						
Very low birthweight[4]	3.0	15.4	85.5	36.5	3.6	0.6	0.1	0.1	0.1	0.1	0.2	7.2
Low birthweight[5]	13.3	47.5	94.6	70.0	44.7	25.0	5.7	7.5	3.2	2.8	4.2	20.5

[1]Equivalents of the gram weights in pounds and ounces are shown in the Technical notes.
[2]Expressed in completed weeks.
[3]Includes races other than white and black.
[4]Less than 1,500 grams.
[5]Less than 2,500 grams.

Table 43. Percent of live births preterm and percent of live births of low birthweight, by race of mother: United States, 1981–93

Year	Preterm[1]			Low birthweight[3]		
	All races[2]	White	Black	All races[2]	White	Black
1993	11.0	9.5	18.5	7.2	6.0	13.3
1992	10.7	9.1	18.4	7.1	5.8	13.3
1991	10.8	9.1	18.9	7.1	5.8	13.6
1990	10.6	8.9	18.8	7.0	5.7	13.3
1989	10.6	8.8	18.9	7.0	5.7	13.5
1988	10.2	8.5	18.7	6.9	5.7	13.3
1987	10.2	8.5	18.4	6.9	5.7	13.0
1986	10.0	8.4	18.0	6.8	5.7	12.8
1985	9.8	8.2	17.8	6.8	5.7	12.6
1984[4]	9.4	7.9	17.1	6.7	5.6	12.6
1983[4]	9.6	8.0	17.7	6.8	5.7	12.8
1982[4]	9.5	8.0	17.4	6.8	5.6	12.6
1981[4]	9.4	7.9	17.3	6.8	5.7	12.7

[1]Births of less than 37 completed weeks gestation.
[2]Includes races other than white and black.
[3]Less than 2,500 grams.
[4]Based on 100 percent of births in selected States and on a 50-percent sample of births in all other States; see Technical notes.

Table 44. Number and percent low birthweight and number of live births by birthweight, by age and race of mother: United States, 1993

Age and race of mother	Low birthweight[1]		Birthweight[2]												
	Number	Percent	Total	Less than 500 grams	500–999 grams	1,000–1,499 grams	1,500–1,999 grams	2,000–2,499 grams	2,500–2,999 grams	3,000–3,499 grams	3,500–3,999 grams	4,000–4,499 grams	4,500–4,999 grams	5,000 grams or more	Not stated
All races[3]															
All ages	288,482	7.2	4,000,240	5,525	20,760	26,753	55,172	180,272	653,329	1,473,810	1,161,340	351,928	59,574	6,985	4,792
Under 15 years	1,686	13.5	12,554	39	206	203	323	915	3,045	4,951	2,386	414	40	4	28
15–19 years	46,259	9.2	501,093	875	3,564	4,464	8,585	28,771	105,757	199,157	118,655	26,820	3,431	370	644
15 years	3,430	11.4	30,074	81	317	377	654	2,001	7,132	11,909	6,259	1,149	138	16	41
16 years	6,525	10.5	61,960	125	504	646	1,235	4,015	13,977	24,920	13,410	2,669	316	37	106
17 years	9,402	9.6	98,501	182	742	937	1,711	5,830	21,283	39,299	22,710	4,989	633	65	120
18 years	12,590	9.1	138,313	203	953	1,143	2,315	7,976	28,821	54,634	33,419	7,583	999	92	175
19 years	14,312	8.3	172,245	284	1,048	1,361	2,670	8,949	34,544	68,395	42,857	10,430	1,345	160	202
20–24 years	74,804	7.2	1,038,127	1,398	5,249	6,707	13,736	47,714	183,143	399,398	287,230	78,923	12,139	1,313	1,177
25–29 years	71,859	6.4	1,128,862	1,457	4,985	6,465	13,767	45,185	170,338	412,603	345,518	107,061	18,162	2,096	1,225
30–34 years	60,233	6.7	901,151	1,115	4,295	5,632	11,780	37,411	128,733	316,214	281,245	94,476	17,116	2,008	1,126
35–39 years	28,243	7.9	357,053	535	2,057	2,773	5,821	17,057	52,678	120,984	108,443	37,808	7,408	992	497
40–44 years	5,152	8.7	59,071	102	388	481	1,109	3,072	9,210	19,705	17,264	6,226	1,231	198	85
45–49 years	246	10.6	2,329	4	16	28	51	147	425	798	599	200	47	4	10
White															
All ages	188,249	6.0	3,149,833	2,942	12,006	16,870	35,985	120,446	459,729	1,147,251	981,051	310,826	53,219	6,053	3,455
Under 15 years	599	10.4	5,755	13	69	74	123	320	1,187	2,360	1,306	269	17	3	14
15–19 years	26,141	7.7	341,817	394	1,860	2,495	4,844	16,548	64,643	135,702	90,075	21,720	2,863	281	392
15 years	1,562	9.4	16,656	25	149	188	305	895	3,460	6,638	4,022	837	111	10	16
16 years	3,390	8.8	38,721	56	222	333	667	2,112	7,761	15,593	9,601	2,043	237	29	67
17 years	5,215	7.9	65,932	95	366	501	958	3,295	12,792	26,325	16,961	3,987	529	48	75
18 years	7,379	7.6	96,747	96	547	659	1,327	4,750	18,206	38,094	25,853	6,203	842	65	105
19 years	8,595	7.0	123,761	122	576	814	1,587	5,496	22,424	49,052	33,638	8,650	1,144	129	129
20–24 years	47,049	6.0	790,154	673	2,887	3,995	8,616	30,878	125,307	301,488	235,760	68,033	10,624	1,123	770
25–29 years	48,715	5.3	920,772	766	2,966	4,243	9,312	31,428	125,224	332,971	298,813	95,910	16,377	1,836	926
30–34 years	42,264	5.6	749,446	670	2,661	3,796	8,254	26,883	96,777	260,460	246,283	85,481	15,527	1,765	889
35–39 years	19,748	6.8	292,693	349	1,313	1,904	4,049	12,133	39,460	98,029	93,742	33,790	6,670	863	391
40–44 years	3,558	7.5	47,386	74	239	343	747	2,155	6,814	15,639	14,580	5,449	1,103	178	65
45–49 years	175	9.7	1,810	3	11	20	40	101	317	602	492	174	38	4	8

See footnotes at end of table.

Table 44. Number and percent low birthweight and number of live births by birthweight, by age and race of mother: United States, 1993—Con.

Age and race of mother	Low birthweight[1]		Birthweight[2]												
	Number	Percent	Total	Less than 500 grams	500–999 grams	1,000–1,499 grams	1,500–1,999 grams	2,000–2,499 grams	2,500–2,999 grams	3,000–3,499 grams	3,500–3,999 grams	4,000–4,499 grams	4,500–4,999 grams	5,000 grams or more	Not stated
Black															
All ages	87,744	13.3	658,875	2,428	8,117	8,956	17,049	51,194	154,825	248,296	132,440	29,295	4,479	658	1,138
Under 15 years	1,041	16.3	6,417	26	130	122	190	573	1,760	2,448	1,011	124	18	1	14
15–19 years	18,906	13.2	143,153	467	1,635	1,850	3,539	11,415	37,507	56,972	24,835	4,184	444	75	230
15 years	1,776	14.4	12,389	56	163	175	339	1,043	3,445	4,853	2,000	266	21	6	22
16 years	2,982	14.0	21,319	66	280	298	552	1,786	5,771	8,560	3,374	528	61	6	37
17 years	3,925	13.3	29,448	86	358	410	711	2,360	7,793	11,730	5,023	834	87	13	43
18 years	4,896	13.2	37,221	104	390	458	927	3,017	9,644	14,809	6,553	1,112	121	24	62
19 years	5,327	12.5	42,776	155	444	509	1,010	3,209	10,854	17,020	7,885	1,444	154	26	66
20–24 years	25,164	12.1	208,149	686	2,246	2,523	4,724	14,985	49,486	81,568	41,788	8,491	1,145	141	366
25–29 years	19,788	13.1	151,566	649	1,865	2,008	3,884	11,382	33,577	56,077	32,644	7,782	1,264	183	251
30–34 years	14,868	14.8	100,966	416	1,466	1,612	2,981	8,393	21,984	35,011	21,883	5,823	1,049	162	186
35–39 years	6,734	16.3	41,348	158	655	728	1,439	3,754	8,999	13,832	8,718	2,435	472	84	74
40–44 years	1,193	17.0	7,029	25	117	107	284	660	1,461	2,304	1,515	444	85	12	15
45–49 years	50	20.4	247	1	3	6	8	32	51	84	46	12	2	–	2

[1]Less than 2,500 grams.
[2]Equivalents of gram weights in terms of pounds and ounces are shown in Technical notes.
[3]Includes races other than white and black.

Table 45. Live births with selected abnormal conditions of the newborn and rates by age of mother, by race of mother: United States, 1993

[Rates are number of live births with specified abnormal condition per 1,000 live births in specified group]

Abnormal condition and race of mother	All births[1]	Abnormal condition reported	Age of mother: All ages	Under 20 years	20–24 years	25–29 years	30–34 years	35–39 years	40–49 years	Not stated
All races[2]	Number		Rate							Number
Anemia	4,000,240	4,355	1.1	1.2	1.2	1.1	1.0	1.2	1.1	76,715
Birth injury[3]	3,570,277	8,952	2.6	2.7	2.7	2.7	2.4	2.1	2.1	79,155
Fetal alcohol syndrome[4,5]	3,777,651	350	0.1	0.1	0.1	0.1	0.1	0.2	*	68,970
Hyaline membrane disease/RDS	4,000,240	25,808	6.6	8.1	6.8	6.1	6.1	6.5	7.2	76,715
Meconium aspiration syndrome	4,000,240	9,430	2.4	2.4	2.4	2.3	2.3	2.6	3.0	76,715
Assisted ventilation less than 30 minutes[6]	3,870,670	68,032	17.9	18.5	17.9	17.8	17.6	18.2	18.4	74,313
Assisted ventilation 30 minutes or longer[6]	3,870,670	29,802	7.9	9.9	8.0	7.1	7.2	8.2	8.8	74,313
Seizures	4,000,240	2,770	0.7	0.7	0.7	0.7	0.7	0.7	0.8	76,715
White										
Anemia	3,149,833	3,270	1.1	1.2	1.1	1.0	1.0	1.2	1.1	60,138
Birth injury[3]	2,783,544	7,499	2.8	3.0	3.0	2.8	2.5	2.3	2.2	62,674
Fetal alcohol syndrome[4,5]	2,957,240	201	0.1	0.1	0.0	0.1	0.1	0.1	*	53,752
Hyaline membrane disease/RDS	3,149,833	20,328	6.6	8.3	6.8	6.1	6.1	6.6	7.1	60,138
Meconium aspiration syndrome	3,149,833	7,014	2.3	2.2	2.3	2.2	2.2	2.5	2.9	60,138
Assisted ventilation less than 30 minutes[6]	3,074,465	53,650	17.8	17.9	17.6	17.7	17.6	18.5	19.0	59,507
Assisted ventilation 30 minutes or longer[6]	3,074,465	22,689	7.5	9.5	7.8	6.9	6.9	7.9	8.5	59,507
Seizures	3,149,833	2,055	0.7	0.7	0.7	0.6	0.7	0.7	0.7	60,138
Black										
Anemia	658,875	918	1.4	1.3	1.4	1.4	1.5	1.6	*	13,324
Birth injury[3]	607,565	1,001	1.7	1.9	1.7	1.6	1.7	1.5	*	13,177
Fetal alcohol syndrome[4,5]	635,178	110	0.2	*	*	0.2	0.3	*	*	12,152
Hyaline membrane disease/RDS	658,875	4,863	7.5	8.0	7.2	7.1	7.8	8.1	9.8	13,324
Meconium aspiration syndrome	658,875	2,017	3.1	2.8	2.9	3.1	3.5	4.1	4.5	13,324
Assisted ventilation less than 30 minutes[6]	615,309	11,971	19.8	19.8	19.6	20.1	20.2	19.6	18.3	11,672
Assisted ventilation 30 minutes or longer[6]	615,309	6,111	10.1	10.9	9.3	9.5	10.8	11.7	13.7	11,672
Seizures	658,875	586	0.9	0.8	0.9	0.9	1.0	1.0	*	13,324

[1]Total number of births to residents of areas reporting specified condition.
[2]Includes races other than white and black.
[3]Massachusetts, Nebraska, and Texas do not report this condition.
[4]Wisconsin does not report this condition.
[5]New York City (but not New York State) reports this condition.
[6]New York City does not report this condition.

Table 46. Live births with selected congenital anomalies and rates by age of mother, by race of mother: Total of 48 reporting States and the District of Columbia, 1993

[Rates are number of live births with specified congenital anomaly per 100,000 live births in specified group]

Congenital anomaly and race of mother	All births[1]	Congenital anomaly reported	Age of mother: All ages	Under 20 years	20–24 years	25–29 years	30–34 years	35–39 years	40–49 years	Not stated
All races[2]	Number		Rate							Number
Anencephalus	3,689,996	501	13.8	12.9	14.0	13.0	14.7	14.3	*	65,623
Spina bifida/Meningocele	3,689,996	916	25.3	25.7	30.0	24.5	21.6	21.9	*	65,623
Hydrocephalus	3,689,996	943	26.0	29.3	29.6	25.2	21.4	23.1	*	65,623
Microcephalus	3,689,996	319	8.8	10.5	7.5	9.8	8.1	7.3	*	65,623
Other central nervous system anomalies	3,689,996	797	22.0	23.6	22.1	22.1	19.5	23.8	*	65,623
Heart malformations	3,689,996	4,098	113.1	97.6	107.3	110.4	116.2	137.2	214.1	65,623
Other circulatory/respiratory anomalies	3,689,996	4,616	127.4	133.4	130.3	116.0	127.3	137.2	180.6	65,623
Rectal atresia/stenosis	3,689,996	325	9.0	8.9	9.0	9.2	7.2	11.7	*	65,623
Tracheo-esophageal fistula/Esophageal atresia	3,689,996	597	16.5	15.6	15.9	16.5	16.8	17.4	*	65,623
Omphalocele/Gastroschisis	3,689,996	920	25.4	52.0	30.0	19.1	13.5	21.9	*	65,623
Other gastrointestinal anomalies	3,689,996	1,124	31.0	36.7	31.2	28.7	30.1	30.7	37.2	65,623
Malformed genitalia	3,689,996	2,697	74.4	71.2	74.4	76.9	68.7	85.2	76.3	65,623
Renal agenesis	3,689,996	400	11.0	12.0	11.3	11.8	10.7	8.9	*	65,623
Other urogenital anomalies	3,689,996	4,015	110.8	97.8	111.6	108.7	119.7	112.1	109.8	65,623
Cleft lip/palate	3,689,996	3,080	85.0	83.9	86.2	88.9	81.4	77.6	96.8	65,623
Polydactyly/Syndactyly/Adactyly	3,689,996	2,959	81.6	109.4	91.0	74.9	70.5	63.4	74.5	65,623
Club foot	3,689,996	2,080	57.4	62.4	61.9	54.3	51.2	62.1	57.7	65,623
Diaphragmatic hernia	3,689,996	432	11.9	10.7	11.1	12.5	13.3	10.1	*	65,623
Other musculoskeletal/integumental anomalies	3,689,996	6,754	186.3	180.8	184.9	179.8	191.9	195.5	249.4	65,623
Down's syndrome	3,689,996	1,650	45.5	25.9	25.5	33.6	50.6	101.4	396.5	65,623
Other chromosomal anomalies	3,689,996	1,526	42.1	36.7	39.9	35.6	40.4	64.0	150.8	65,623
White										
Anencephalus	2,918,658	402	14.0	14.6	14.5	12.7	15.6	12.7	*	51,816
Spina bifida/Meningocele	2,918,658	756	26.4	29.2	31.9	25.2	22.4	21.1	*	51,816
Hydrocephalus	2,918,658	746	26.0	30.5	29.6	24.8	21.4	24.2	*	51,816
Microcephalus	2,918,658	233	8.1	8.1	7.4	9.7	7.3	*	*	51,816
Other central nervous system anomalies	2,918,658	646	22.5	24.5	23.0	22.3	19.9	25.0	*	51,816
Heart malformations	2,918,658	3,327	116.1	98.5	112.0	114.0	116.6	136.7	221.9	51,816
Other circulatory/respiratory anomalies	2,918,658	3,675	128.2	137.7	135.7	115.1	125.9	133.2	189.5	51,816
Rectal atresia/stenosis	2,918,658	263	9.2	10.9	9.7	8.8	6.8	11.1	*	51,816
Tracheo-esophageal fistula/Esophageal atresia	2,918,658	517	18.0	19.3	17.0	18.0	18.1	18.4	*	51,816
Omphalocele/Gastroschisis	2,918,658	720	25.1	58.1	31.9	17.9	13.1	20.0	*	51,816
Other gastrointestinal anomalies	2,918,658	861	30.0	37.6	30.4	28.3	28.4	27.6	*	51,816
Malformed genitalia	2,918,658	2,256	78.7	74.3	78.6	81.6	72.6	90.2	80.9	51,816
Renal agenesis	2,918,658	341	11.9	14.6	12.1	12.5	11.4	8.8	*	51,816
Other urogenital anomalies	2,918,658	3,500	122.1	116.2	125.2	116.5	129.4	120.9	115.6	51,816
Cleft lip/palate	2,918,658	2,680	93.5	103.2	98.5	96.1	85.5	78.7	99.4	51,816
Polydactyly/Syndactyly/Adactyly	2,918,658	1,655	57.7	60.6	60.9	57.3	55.4	50.7	69.3	51,816
Club foot	2,918,658	1,800	62.8	75.2	70.0	57.1	53.9	68.0	67.0	51,816
Diaphragmatic hernia	2,918,658	356	12.4	11.5	11.6	12.7	13.7	10.7	*	51,816
Other musculoskeletal/integumental anomalies	2,918,658	5,381	187.7	187.4	183.9	178.3	195.3	198.1	254.3	51,816
Down's syndrome	2,918,658	1,431	49.9	28.6	28.8	35.2	55.4	105.6	429.9	51,816
Other chromosomal anomalies	2,918,658	1,240	43.3	39.2	42.3	36.8	39.1	64.1	154.9	51,816

See footnotes at end of table.

Table 46. Live births with selected congenital anomalies and rates by age of mother, by race of mother: Total of 48 reporting States and the District of Columbia, 1993—Con.

[Rates are number of live births with specified congenital anomaly per 100,000 live births in specified group]

Congenital anomaly and race of mother	All births[1]	Congenital anomaly reported	Age of mother: All ages	Under 20 years	20–24 years	25–29 years	30–34 years	35–39 years	40–49 years	Not stated
Black	Number		Rate							Number
Anencephalus	598,231	70	11.9	*	11.6	*	*	*	*	10,475
Spina bifida/Meningocele	598,231	128	21.8	18.9	21.6	24.8	*	*	*	10,475
Hydrocephalus	598,231	177	30.1	26.9	30.6	33.8	31.1	*	*	10,475
Microcephalus	598,231	69	11.7	16.0	*	*	*	*	*	10,475
Other central nervous system anomalies	598,231	129	21.9	21.8	19.5	26.3	*	*	*	10,475
Heart malformations	598,231	612	104.1	97.3	92.9	98.5	118.8	152.0	*	10,475
Other circulatory/respiratory anomalies	598,231	717	122.0	122.0	110.3	118.8	134.9	163.4	*	10,475
Rectal atresia/stenosis	598,231	41	7.0	*	*	*	*	*	*	10,475
Tracheo-esophageal fistula/Esophageal atresia	598,231	55	9.4	*	12.1	*	*	*	*	10,475
Omphalocele/Gastroschisis	598,231	174	29.6	39.9	24.8	28.6	*	*	*	10,475
Other gastrointestinal anomalies	598,231	226	38.5	35.6	37.0	33.8	50.7	*	*	10,475
Malformed genitalia	598,231	351	59.7	63.9	64.9	54.1	47.3	65.9	*	10,475
Renal agenesis	598,231	48	8.2	*	*	*	*	*	*	10,475
Other urogenital anomalies	598,231	384	65.3	55.2	63.3	72.9	69.2	68.8	*	10,475
Cleft lip/palate	598,231	254	43.2	37.0	35.4	48.9	50.7	*	*	10,475
Polydactyly/Syndactyly/Adactyly	598,231	1,234	210.0	227.3	212.2	203.0	205.2	174.9	*	10,475
Club foot	598,231	223	37.9	35.6	33.3	46.6	38.0	*	*	10,475
Diaphragmatic hernia	598,231	58	9.9	*	*	*	*	*	*	10,475
Other musculoskeletal/integumental anomalies	598,231	930	158.2	154.7	167.9	157.9	140.7	163.4	*	10,475
Down's syndrome	598,231	151	25.7	16.7	14.8	24.8	26.5	71.7	*	10,475
Other chromosomal anomalies	598,231	203	34.5	27.6	30.1	30.8	46.1	*	*	10,475

[1] Total number of births.
[2] Includes races other than white and black.

NOTE: Excludes data for New Mexico and New York, which did not require reporting of congenital anomalies.

Table 47. Live births by plurality of birth and ratios, by age and race of mother: United States, 1993

Plurality and race of mother	All ages	Age of mother									
		Under 15 years	15–19 years			20–24 years	25–29 years	30–34 years	35–39 years	40–44 years	45–49 years
			Total	15–17 years	18–19 years						
						Number					
All live births[1]	4,000,240	12,554	501,093	190,535	310,558	1,038,127	1,128,862	901,151	357,053	59,071	2,329
White	3,149,833	5,755	341,817	121,309	220,508	790,154	920,772	749,446	292,693	47,386	1,810
Black	658,875	6,417	143,153	63,156	79,997	208,149	151,566	100,966	41,348	7,029	247
Live births in single deliveries[1]	3,899,627	12,407	493,907	188,159	305,748	1,017,164	1,100,043	872,336	344,297	57,260	2,213
White	3,071,442	5,687	337,475	119,994	217,481	775,475	897,996	725,312	281,956	45,833	1,708
Black	639,997	6,344	140,513	62,165	78,348	202,488	146,502	97,244	39,813	6,854	239
Live births in twin deliveries[1]	96,445	147	7,105	2,357	4,748	20,599	27,788	26,957	12,042	1,698	109
White	74,643	68	4,280	1,302	2,978	14,396	21,845	22,418	10,091	1,449	96
Black	18,551	73	2,624	988	1,636	5,580	4,988	3,614	1,499	166	7
Live births in triplet and other plural deliveries[1]	4,168	–	81	19	62	364	1,031	1,858	714	113	7
White	3,748	–	62	13	49	283	931	1,716	646	104	6
Black	327	–	16	3	13	81	76	108	36	9	1
						Ratio per 1,000 live births					
All multiple births[1]	25.2	11.7	14.3	12.5	15.5	20.2	25.5	32.0	35.7	30.7	49.8
White	24.9	11.8	12.7	10.8	13.7	18.6	24.7	32.2	36.7	32.8	56.4
Black	28.7	11.4	18.4	15.7	20.6	27.2	33.4	36.9	37.1	24.9	*
All twin births[1]	24.1	11.7	14.2	12.4	15.3	19.8	24.6	29.9	33.7	28.7	46.8
White	23.7	11.8	12.5	10.7	13.5	18.2	23.7	29.9	34.5	30.6	53.0
Black	28.2	11.4	18.3	15.6	20.5	26.8	32.9	35.8	36.3	23.6	*
						Ratio per 100,000 live births					
All higher-order multiple births[1,2]	104.2	*	16.2	*	20.0	35.1	91.3	206.2	200.0	191.3	*
White	119.0	*	18.1	*	22.2	35.8	101.1	229.0	220.7	219.5	*
Black	49.6	*	*	*	*	38.9	50.1	107.0	87.1	*	*

[1]Includes races other than white and black.
[2]Includes triplet and higher-order plural deliveries.

Technical notes

Source of data

Data shown in this report for 1993 are based on 100 percent of the birth certificates in all States and the District of Columbia. The data are provided to the National Center for Health Statistics (NCHS) through the Vital Statistics Cooperative Program (VSCP). In 1984 and earlier years, the VSCP included varying numbers of States that provided data based on 100 percent of their birth certificates. Data for States not in the VSCP were based on a 50-percent sample of birth certificates filed in those States. Information on sampling procedures and sampling errors for 1984 and earlier years is provided in the annual report, *Vital Statistics of the United States*, Volume I, Natality.

Race

Beginning with the 1989 data year, NCHS is tabulating its birth data primarily by race of the mother. In 1988 and prior years, births were tabulated by the race of the child, which was determined from the race of the parents as entered on the birth certificate.

Trend data by race shown in this report are by race of mother for all years beginning with the 1980 data year. In order to facilitate continuity and analysis of the data, trend tables showing data for years prior to 1980 show data for both race of mother and race of child for 1980. This makes it possible to distinguish the effects of this change from real changes in the data. The text in this report focuses on data tabulated by race of mother. Text references to white births and white mothers or black births and black mothers are used interchangeably for ease in writing.

The factors influencing the decision to tabulate births by race of the mother have been discussed in detail in previous reports (16,56–58). They include the recent revision of the birth certificate, effective with the 1989 data year, which includes many more health questions which are directly associated with the mother in addition to many other items on the birth certificate for more than two decades. In all these instances, it is more appropriate to tabulate births by the mother's race. A second factor has been the increasing incidence of interracial parentage. In 1993, 4.1 percent of births were to parents of different races compared with just 1.5 percent in 1973. The third factor influencing the decision to tabulate births by race of mother is the growing proportion of births with race of father not stated, 16 percent in 1993 compared with 9 percent in 1973. This reflects the increase in the proportion of births to unmarried women; in many such cases, no information is reported on the father. These births are already assigned the race of the mother because there is no alternative.

Tabulating all births by race of mother, therefore, provides for a more uniform approach, rather than a necessarily arbitrary combination of parental races. This topic is discussed in greater detail in two recent papers (99,100).

Marital status

Beginning with the 1980 data year, national estimates of births to unmarried women have been derived from two sources. In 1993, marital status was reported directly on the birth certificates of 44 States and the District of Columbia. In the remaining six States, which lack such an item (California, Connecticut, Michigan, Nevada, New York, and Texas), marital status is inferred from a comparison of the child's and parents' surnames. This procedure represents a substantial departure from the method used before 1980 to prepare national estimates of births to unmarried women, which assumed that the incidence of births to unmarried women in States with no direct question on marital status was the same as the incidence in reporting States in the same geographic division (23).

The current method represents an attempt to use related information on the birth certificate to improve the quality of national data as well as to provide data for the individual nonreporting States. An evaluation of this method and its validity for California (the largest nonreporting State) has been published (101). Because of the continued substantial increases in nonmarital childbearing throughout the 1980s, the data have been intensively evaluated by the Division of Vital Statistics, NCHS. There has been continuing concern that the current method might overstate the number of births to unmarried women because it incorporates data based on a comparison of surnames. This is because women who have retained their maiden surname after marriage and who are frequently older, well-educated women, would be classified as unmarried. The results of this evaluation have been generally similar in both the reporting States and the States using inferential data for all races combined. The results differed for white and black births. Between 1992 and 1993, births to unmarried white women increased 1 percent in the group of States providing inferential data and 4 percent in the group of States with a marital status item on the birth certificate. Births to unmarried black women declined 3 percent in the States providing inferential data, and 1 percent in the States reporting marital status directly on the birth certificate.

Texas births—The number of births to unmarried women in Texas is underreported. As a result of legislation passed in 1989, a birth is considered to have occurred to a married woman if the mother provides any information about the father, or if a paternity affadavit has been filed. The measurement of marital status for Texas births is expected to improve beginning with the 1994 data year because a direct question on marital status has been added to the Texas birth certificate.

Gestation

The 1989 revision of the U.S. Standard Certificate of Live Birth includes a new item, ''clinical estimate of gestation,'' which is compared with length of gestation computed from the date the last normal menstrual period (LMP) began when the latter appears to be inconsistent with birthweight. This is done for normal weight births of apparently short gestations and very low birthweight births reported to be full term. The clinical estimate was also used if the LMP date was not reported. The period of gestation

for 4.2 percent of the births in 1993 was based on the clinical estimate of gestation. For 96 percent of these records, the clinical estimate was used because the LMP date was not reported. For the remaining 4 percent, the clinical estimate was used because it was compatible with the reported birthweight, whereas the LMP-based gestation was not. In cases where the reported birthweight was inconsistent with both the LMP-computed gestation and the clinical estimate of gestation, the LMP-computed gestation was used and birthweight was reclassified as ''not stated.'' This was necessary for fewer than 500 births or 0.01 percent of all birth records in 1993. The levels of the adjustments in 1993 data were virtually the same as in 1991–92 (15,16).

Birthweight

Birthweight is reported in some areas in pounds and ounces rather than in grams. However, the metric system has been used in tabulating and presenting the statistics to facilitate comparison with data published by other groups. Equivalents of the gram weights in terms of pounds and ounces are as follows:

Less than 500 grams = 1 lb 1 oz or less
500–999 grams = 1 lb 2 oz–2 lb 3 oz
1,000–1,499 grams = 2 lb 4 oz–3 lb 4 oz
1,500–1,999 grams = 3 lb 5 oz–4 lb 6 oz
2,000–2,499 grams = 4 lb 7 oz–5 lb 8 oz
2,500–2,999 grams = 5 lb 9 oz–6 lb 9 oz
3,000–3,499 grams = 6 lb 10 oz–7 lb 11 oz
3,500–3,999 grams = 7 lb 12 oz–8 lb 13 oz
4,000–4,499 grams = 8 lb 14 oz–9 lb 14 oz
4,500–4,999 grams = 9 lb 15 oz–11 lb 0 oz
5,000 grams or more = 11 lb 1 oz or more

Method of delivery

Several rates are computed for method of delivery. The overall cesarean section rate or *total cesarean* rate is computed as the percent of all births that were delivered by cesarean section. The *primary cesarean* rate is a measure that relates the number of women having a first cesarean delivery to all women giving birth who have never had a cesarean delivery. The denominator for this rate includes all births less those with method of delivery classified as repeat cesarean, vaginal birth after previous cesarean (VBAC), or method not stated. The rate for *vaginal birth after previous cesarean* (VBAC) delivery is computed by relating all VBAC deliveries to the sum of VBAC and repeat cesarean deliveries, that is, to women with a previous cesarean section.

Computations of percents, percent distributions, and medians

Births for which a particular characteristic is unknown were subtracted from the figures for total births that were used as denominators before percents, percent distributions, and medians were computed. In the case of birth intervals, the percent distributions also exclude the second- or later-born child in a multiple delivery (interval of 0 months). The median number of prenatal visits also excludes births to mothers who had no prenatal care. Computations of the median years of school completed and the median number of prenatal visits were based on ungrouped data. An asterisk is shown in place of any derived statistic based on fewer than 20 births in the numerator or denominator.

Population denominators

Birth and fertility rates for 1993 shown in tables 1, 3–5, 7, 10, 11, 14, and 15 are based on populations estimated as of July 1, 1993. The population estimates have been published by the U.S. Bureau of the Census (3) and are based on the 1990 census counts by race and age that were modified to be consistent with the Office of Management and Budget racial categories and historical categories for birth data and, in the case of age, to reflect age as of the census reference date. The modification procedures are described in detail in a census report (102).

Birth and fertility rates by month shown in table 12 are based on monthly population estimates also based on the 1993 census count. Rates for unmarried women shown in tables 14 and 15 are based on distributions of the population by marital status as of March 1993 published by the U.S. Bureau of the Census (13), which have been adjusted to July 1993 population levels (3) by the Division of Vital Statistics, NCHS (23).

Birth and fertility rates for the Hispanic population, shown in tables 7 and 11, are based on estimates of the total Hispanic population as of July 1, 1993 (3). Rates for Hispanic subgroups are based on special population estimates. (103).

Computation of rates

In computing birth rates by live-birth order, births with birth order not stated were distributed in the same proportion as births of known live-birth order within each age-of-mother classification. This procedure is done separately by race. A similar process is followed for computing birth rates by age of father; births with age of father not stated are distributed first within each age-of-mother group. This procedure is followed because while, overall, age of father is missing on 17 percent of the birth certificates, father's age is not reported on more than 40 percent of the records when the mother is a teenager.

In computing birth and fertility rates for the Hispanic population, births with origin of mother not stated are included with non-Hispanic births rather than being distributed. Thus, rates for the U.S. Hispanic population are underestimates of the true rates to the extent that the births with origin not stated (1.3 percent) were actually to Hispanic mothers. The population with origin not stated was imputed. The effect on the rates is believed to be small.

Random variation and relative standard error

Although the birth data in this report for births since 1985 are not subject to sampling error, they may be affected by random variation in the number of births involved. When the number of events is small (perhaps less than 100) and the probability of such an event is small, considerable caution must be observed in interpreting the data. More information on this topic is included in the Technical Appendix of the annual report, *Vital Statistics of the United States*, 1990, Volume I, Natality. In addition, the relative standard errors for birth rates for Hispanic subgroups, particularly Cuban women, may be somewhat higher than if based only on the number of births. This

reflects the considerable sampling variability in the population estimates for these groups (103).

Definitions of medical terms

The 1989 revision of the U.S. Standard Certificate of Live Birth includes several maternal and infant health items in checkbox format, including obstetric procedures, medical risk factors, complications of labor and delivery, abnormal conditions of the newborn, and congenital anomalies of the child (figure I). The definitions which follow are adapted and abbreviated from a set of definitions compiled by a committee of Federal and State health statistics officials for the Association for Vital Records and Health Statistics (104).

Medical risk factors for this pregnancy

Anemia—Hemoglobin level of less than 10.0 g/dL during pregnancy or a hematocrit of less than 30 percent during pregnancy.

Cardiac disease—Disease of the heart.

Acute or chronic lung disease—Disease of the lungs during pregnancy.

Diabetes—Metabolic disorder characterized by excessive discharge of urine and persistent thirst; includes juvenile onset, adult onset, and gestational diabetes during pregnancy.

Genital herpes—Infection of the skin of the genital area by herpes simplex virus.

Hydramnios/Oligohydramnios—Any noticeable excess (hydramnios) or lack (oligohydramnios) of amniotic fluid.

Hemoglobinopathy—A blood disorder caused by alteration in the genetically determined molecular structure of hemoglobin (example: sickle cell anemia).

Hypertension, chronic—Blood pressure persistently greater than 140/90, diagnosed prior to onset of pregnancy or before the 20th week of gestation.

Hypertension, pregnancy-associated—An increase in blood pressure of at least 30 mm Hg systolic or 15 mm Hg diastolic on two measurements taken 6 hours apart after the 20th week of gestation.

Eclampsia—The occurrence of convulsions and/or coma unrelated to other

38a. MEDICAL RISK FACTORS FOR THIS PREGNANCY *(Check all that apply)*

- Anemia (Hct. <30/Hgb. <10) ... 01 ☐
- Cardiac disease ... 02 ☐
- Acute or chronic lung disease ... 03 ☐
- Diabetes ... 04 ☐
- Genital herpes ... 05 ☐
- Hydramnios/Oligohydramnios ... 06 ☐
- Hemoglobinopathy ... 07 ☐
- Hypertension, chronic ... 08 ☐
- Hypertension, pregnancy-associated ... 09 ☐
- Eclampsia ... 10 ☐
- Incompetent cervix ... 11 ☐
- Previous infant 4000+ grams ... 12 ☐
- Previous preterm or small-for-gestational-age infant ... 13 ☐
- Renal disease ... 14 ☐
- Rh sensitization ... 15 ☐
- Uterine bleeding ... 16 ☐
- None ... 00 ☐
- Other _____ 17 ☐ *(Specify)*

38b. OTHER RISK FACTORS FOR THIS PREGNANCY *(Complete all items)*

- Tobacco use during pregnancy ... Yes ☐ No ☐
  - Average number cigarettes per day _____
- Alcohol use during pregnancy ... Yes ☐ No ☐
  - Average number drinks per week _____
- Weight gained during pregnancy _____ lbs.

39. OBSTETRIC PROCEDURES *(Check all that apply)*

- Amniocentesis ... 01 ☐
- Electronic fetal monitoring ... 02 ☐
- Induction of labor ... 03 ☐
- Stimulation of labor ... 04 ☐
- Tocolysis ... 05 ☐
- Ultrasound ... 06 ☐
- None ... 00 ☐
- Other _____ 07 ☐ *(Specify)*

40. COMPLICATIONS OF LABOR AND/OR DELIVERY *(Check all that apply)*

- Febrile (>100°F. or 38°C.) ... 01 ☐
- Meconium, moderate/heavy ... 02 ☐
- Premature rupture of membrane (>12 hours) ... 03 ☐
- Abruptio placenta ... 04 ☐
- Placenta previa ... 05 ☐
- Other excessive bleeding ... 06 ☐
- Seizures during labor ... 07 ☐
- Precipitous labor (<3 hours) ... 08 ☐
- Prolonged labor (>20 hours) ... 09 ☐
- Dysfunctional labor ... 10 ☐
- Breech/Malpresentation ... 11 ☐
- Cephalopelvic disproportion ... 12 ☐
- Cord prolapse ... 13 ☐
- Anesthetic complications ... 14 ☐
- Fetal distress ... 15 ☐
- None ... 00 ☐
- Other _____ 16 ☐ *(Specify)*

41. METHOD OF DELIVERY *(Check all that apply)*

- Vaginal ... 01 ☐
- Vaginal birth after previous C-section ... 02 ☐
- Primary C-section ... 03 ☐
- Repeat C-section ... 04 ☐
- Forceps ... 05 ☐
- Vacuum ... 06 ☐

42. ABNORMAL CONDITIONS OF THE NEWBORN *(Check all that apply)*

- Anemia (Hct. <39/Hgb. <13) ... 01 ☐
- Birth injury ... 02 ☐
- Fetal alcohol syndrome ... 03 ☐
- Hyaline membrane disease/RDS ... 04 ☐
- Meconium aspiration syndrome ... 05 ☐
- Assisted ventilation <30 min ... 06 ☐
- Assisted ventilation ≥30 min ... 07 ☐
- Seizures ... 08 ☐
- None ... 00 ☐
- Other _____ 09 ☐ *(Specify)*

43. CONGENITAL ANOMALIES OF CHILD *(Check all that apply)*

- Anencephalus ... 01
- Spina bifida/Meningocele ... 02
- Hydrocephalus ... 03
- Microcephalus ... 04
- Other central nervous system anomalies *(Specify)* _____ 05
- Heart malformations ... 06
- Other circulatory/respiratory anomalies *(Specify)* _____ 07
- Rectal atresia/stenosis ... 08
- Tracheo-esophageal fistula/ Esophageal atresia ... 09
- Omphalocele/ Gastroschisis ... 10
- Other gastrointestinal anomalies *(Specify)* _____ 11
- Malformed genitalia ... 12
- Renal agenesis ... 13
- Other urogenital anomalies *(Specify)* _____ 14
- Cleft lip/palate ... 15
- Polydactyly/Syndactyly/Adactyly ... 16
- Club foot ... 17
- Diaphragmatic hernia ... 18
- Other musculoskeletal/integumental anomalies *(Specify)* _____ 19
- Down's syndrome ... 20
- Other chromosomal anomalies *(Specify)* _____ 21
- None ... 00
- Other _____ 22 *(Specify)*

Figure I. New maternal and infant health items from the 1989 revision of the U.S. Standard Certificate of Live Birth.

cerebral conditions in women with signs and symptoms of pre-eclampsia.

Incompetent cervix—Characterized by painless dilation of the cervix in the second trimester or early in the third trimester of pregnancy, with premature expulsion of membranes through the cervix and ballooning of the membranes into the vagina, followed by rupture of the membranes and subsequent expulsion of the fetus.

Previous infant 4,000+ grams—The birth weight of a previous live-born child was over 4,000 grams (8 pounds 14 ounces).

Previous preterm or small-for-gestational-age infant—Previous birth of an infant prior to term (before 37 completed weeks of gestation) or of an infant weighing less than the tenth percentile for gestational age using a standard weight-for-age chart.

Renal disease—Kidney disease.

Rh Sensitization—The process or state of becoming sensitized to the Rh factor as when an Rh-negative woman is pregnant with an Rh-positive fetus.

Uterine bleeding—Any clinically significant bleeding during the pregnancy taking into consideration the stage of pregnancy; any second or third trimester bleeding of the uterus prior to the onset of labor.

Obstetric procedures

Amniocentesis—Surgical transabdominal perforation of the uterus to obtain amniotic fluid to be used in the detection of genetic disorders, fetal abnormalities, and fetal lung maturity.

Electronic fetal monitoring—Monitoring with external devices applied to the maternal abdomen or with internal devices with an electrode attached to the fetal scalp and a catheter through the cervix into the uterus, to detect and record fetal heart tones and uterine contractions.

Induction of labor—The initiation of uterine contractions before the spontaneous onset of labor by medical and/or surgical means for the purpose of delivery.

Stimulation of labor—Augmentation of previously established labor by use of oxytocin.

Tocolysis—Use of medications to inhibit preterm uterine contractions to extend the length of pregnancy and, therefore, avoid a preterm birth.

Ultrasound—Visualization of the fetus and the placenta by means of sound waves.

Complications of labor and/or delivery

Febrile—A fever greater than 100 degrees F. or 38 C. occurring during labor and/or delivery.

Meconium, moderate/heavy— Meconium consists of undigested debris from swallowed amniotic fluid, various products of secretion, excretion and shedding by the gastrointestinal tract; moderate to heavy amounts of meconium in the amniotic fluid noted during labor and/or delivery.

Premature rupture of membranes (more than 12 hours)—Rupture of the membranes at any time during pregnancy and more than 12 hours before the onset of labor.

Abruptio placenta—Premature separation of a normally implanted placenta from the uterus.

Placenta previa—Implantation of the placenta over or near the internal opening of the cervix.

Other excessive bleeding—The loss of a significant amount of blood from conditions other than abruptio placenta or placenta previa.

Seizures during labor—Maternal seizures occurring during labor from any cause.

Precipitous labor (less than 3 hours)—Extremely rapid labor and delivery lasting less than 3 hours.

Prolonged labor (more than 20 hours)—Abnormally slow progress of labor lasting more than 20 hours.

Dysfunctional labor—Failure to progress in a normal pattern of labor.

Breech/Malpresentation—At birth, the presentation of the fetal buttocks rather than the head, or other malpresentation.

Cephalopelvic disproportion—The relationship of the size, presentation, and position of the fetal head to the maternal pelvis which prevents dilation of the cervix and/or descent of the fetal head.

Cord prolapse—Premature expulsion of the umbilical cord in labor before the fetus is delivered.

Anesthetic complications—Any complication during labor and/or delivery brought on by an anesthetic agent or agents.

Fetal distress—Signs indicating fetal hypoxia (deficiency in amount of oxygen reaching fetal tissues).

Abnormal conditions of the newborn

Anemia—Hemoglobin level of less than 13.0 g/dL or a hematocrit of less than 39 percent.

Birth injury—Impairment of the infant's body function or structure due to adverse influences that occurred at birth.

Fetal alcohol syndrome—A syndrome of altered prenatal growth and development occurring in infants born of women who consumed excessive amounts of alcohol during pregnancy.

Hyaline membrane disease/RDS—A disorder primarily of prematurity, manifested clinically by respiratory distress and pathologically by pulmonary hyaline membranes and incomplete expansion of the lungs at birth.

Meconium aspiration syndrome—Aspiration of meconium by the fetus or newborn, affecting the lower respiratory system.

Assisted ventilation (less than 30 minutes)—A mechanical method of assisting respiration for newborns with respiratory failure.

Assisted ventilation (30 minutes or more)—Newborn placed on assisted ventilation for 30 minutes or longer.

Seizures—A seizure of any etiology.

Congenital anomalies of child

Anencephalus—Absence of the cerebral hemispheres.

Spina bifida/meningocele—Developmental anomaly characterized by defective closure of the bony encasement of the spinal cord, through which the cord and meninges may or may not protrude.

Hydrocephalus—Excessive accumulation of cerebrospinal fluid within the ventricles of the brain with consequent enlargement of the cranium.

Microcephalus—A significantly small head.

Other central nervous system anomalies—Other specified anomalies of the brain, spinal cord, and nervous system.

Heart malformations—Congenital anomalies of the heart.

Other circulatory/respiratory anomalies—Other specified anomalies of the circulatory and respiratory systems.

Rectal atresia/stenosis—Congenital absence, closure, or narrowing of the rectum.

Tracheo-esophageal fistula/Esophageal atresia—An abnormal passage between the trachea and the esophagus; esophageal atresia is the congenital absence or closure of the esophagus.

Omphalocele/Gastroschisis—An omphalocele is a protrusion of variable amounts of abdominal viscera from a midline defect at the base of the umbilicus. In gastroschisis, the abdominal viscera protrude through an abdominal wall defect, usually on the right side of the umbilical cord insertion.

Other gastrointestinal anomalies—Other specified congenital anomalies of the gastrointestinal system.

Malformed genitalia—Congenital anomalies of the reproductive organs.

Renal agenesis—One or both kidneys are completely absent.

Other urogenital anomalies—Other specified congenital anomalies of the organs concerned in the production and excretion of urine, together with organs of reproduction.

Cleft lip/palate—Cleft lip is a fissure or elongated opening of the lip; cleft palate is a fissure in the roof of the mouth. These are failures of embryonic development.

Polydactyly/Syndactyly/Adactyly—Polydactyly is the presence of more than five digits on either hands and/or feet; syndactyly is having fused or webbed fingers and/or toes; adactyly is the absence of fingers and/or toes.

Club foot—Deformities of the foot, which is twisted out of shape or position.

Diaphragmatic hernia—Herniation of the abdominal contents through the diaphragm into the thoracic cavity usually resulting in respiratory distress.

Other musculoskeletal/integumental anomalies—Other specified congenital anomalies of the muscles, skeleton, or skin.

Down's syndrome—The most common chromosomal defect, with most cases resulting from an extra chromosome (trisomy 21).

Other chromosomal anomalies—All other chromosomal aberrations.

Related reports

Many of the topics discussed in this report are covered in more analytic detail in other reports published by NCHS. Topics of reports published in the past 5 years include birth rates by educational attainment (28), twin births (105), cesarean deliveries (42), birth rates for States (106), births to unmarried mothers (23), characteristics of births in Asian or Pacific Islander subgroups (18), and trends in pregnancies and pregnancy rates (6).

This report presents summary tabulations from the final natality statistics for 1993. More detailed tabulations for 1993 will be published in *Vital Statistics of the United States, Volume I—Natality*. Prior to the publication of that volume, the National Center for Health Statistics will respond to requests for unpublished data whenever possible.

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